Clinical Lecture

ON THE

TREATMENT OF PARTIAL EPILEPSY BY ENCIRCLING BLISTERS, WITH TRANSFER OF THE AURA.

Delivered at the National Hospital for the Paralysed and Epileptic,

BY THOMAS BUZZARD, M.D., F.R.C.P.,
PHYSICIAN TO THE HOSPITAL

GENTLEMEN,—There is a patient in this hospital (John M——, aged twenty-three) who came in on Oct. 25th last on account of fits. The first took place at nine years of age, the second at sixteen; and after that he was accustomed to have every month or two an attack of the kind which has been observed to take place since he has been in the hospital, though more slight, he says, in character. About three months before he came here, however, they began to be extremely numerous, and Dr. Parry of Carnarvon, under whose care he was, gives the following excellent description of them: "The character of the attacks varies, being sometimes accompanied by loss of consciousness, together with convulsions of the right arm and leg; at other times the fit is merely a spasm of the arm or leg, or both, and that of the right side. Some three months ago he had a series of attacks, leaving him drowsy and feverish; and afterwards he had some paresis of the right arm and leg. Otherwise, he has had no vomiting, headache, or other symptom pointing to gross lesion of the brain, except it be the confinement of the spasm to the right side. The fits now generally occur between 9 P.M. and 2 A.M.; and vary, being sometimes spasms of the right arm and leg, and sometimes a complete fit. He had taken bromides for some time before I saw him, and has also taken them since, together with arsenic, borax, belladonna, &c.; and his family is anxious to see if anything further could possibly be done to moderate the incomplete seizures of the arm and leg, which chiefly distress him every night."

The patient's own account of the beginning of a fit was that "it feels like going to sleep in the big toe of the right foot, followed by numbness in the right calf, which runs up the leg, often spreading to the genitals, then up the right side and down the right arm; the foot twitches up." He sometimes loses consciousness, and often not. It was ascertained by observation that, in an attack, convulsions first affected the right limbs, and subsequently, though to a slight extent, the left. His gait when he came in was paretic, the right foot sweeping the floor, and the right leg being weaker than the left. The grasp of the right hand measured 75° by the dynamometer; that of the left, 85°. There was no wasting of the right leg. Occasional twitchings which are observed on the right side of his face, the patient says, he has been subject to ever since he had a cut extending down the cheek from the inner canthus six or seven years ago. His eyesight appeared to be quite good, but notwithstanding this, the ophthalmoscope gave evidence of slight optic neuritis (apparently of old-standing) in both eyes, but much more marked in the right than in the left. In the patient's family there is no history of tubercle or of nervous disease, and he has never had syphilis or any mechanical injury. The heart sounds are normal; the urine acid, containing no albumen or sugar. The man could himself give but little account of his condition during several weeks preceding his admission, and said that he had been only partially conscious. His memory was exceedingly bad, and he appeared to be in a state of mental obfuscation.

On admission bromide of potassium was administered, at first in doses of thirty grains, and, after five days, sixty grains every night, and the fits were by this means reduced in number from nine during the first night to two or three occurring nightly afterwards. In the course of a week the patient had had twenty-eight seizures whilst taking the bromide. These all commenced with convulsion of the right limbs, but in only some of them did he lose consciousness. Here is an account of one of them as noted down by the ward attendant: "Did not lose consciousness; called to the attendant and said, 'I am having a fit.' The right leg was drawn up to a right angle, right arm extended straight out from the side, left leg and arm straight down; all four limbs were rigid. The right arm and leg were convulsed for a very short time only. Did not notice any impression on the face and eyes; only flushed during fit, and pale afterwards. Did not bite tongue or pass water. Ankle clonus and knee-jerk excessive immediately after the fit.[1] Duration one minute." Each of the attacks, it must be noted, had been preceded by the aura already described, a feeling as of the big toe of the right foot going to sleep, with numbness of the right calf spreading up the right side and down the right arm. It was in these circumstances that on Nov. 2nd the bromide was discontinued, no other drug being substituted. Blistering fluid was now painted in the form of a ring, one inch in width, encircling the right leg just above the ankle, which produced well-marked vesication.

Upon my visit to the ward on Nov. 7th I learned from the attendant that during the night of Nov. 2nd (after the application of the blister) there had been no fit, but that an attack occurred on the 3rd, one again on the 4th, two on the 5th, and two on the 6th. The patient himself now volunteered the remark that since the blister was applied he felt the twitching in the *left* leg at the beginning of an attack. This had never happened to him before. At the same time, when closely questioned, he reported that there was some, but not nearly so much, twitching as usual in the right leg. Another blister was now applied just above the last, which had healed. From that time he went entirely without any fit for nineteen days. On the night of the 25th an attack took place, preceded by an aura in the pubic region, and on the 26th another, which commenced with a peculiar sensation in the right groin. In neither was there any trace at all of the original aura, and, indeed, in none of the attacks which have since taken place has there been any return of it. A third blister above the preceding one was applied on Nov. 30th. On Dec. 1st there was again a fit, beginning with an aura in the right groin, one on the 2nd, 7th, 15th, 16th, 22nd, 26th, 27th, and Jan. 1st. A fourth blister had been applied on Dec. 12th. A ring of cauterisation was produced by the thermo-cautery around the right leg on Jan. 4th, and by the same means on Jan. 16th around the left leg. Since then there have been two attacks in which the aura has again been a peculiar feeling in the right groin. With the diminution of attacks the patient has greatly improved in health, and especially in his memory and mental power. The weakness of the right leg has quite disappeared, and the grasp of the right hand now measures about the same as that of the left.

I do not intend to dwell upon the pathological aspects of this case. It is, perhaps, sufficient to say that the character of the attacks and the presence of optic neuritis suggest some kind of coarse lesion of the cortical grey matter of the brain. On the therapeutical, and also on the physiological, side the case seems to me to present points of importance and interest. A very marked change as regards the frequency of attacks in this patient has followed the application of rings of blister to the limb which was the seat of the aura. Now, this, in my opinion, is not a mere coincidence, but a veritable effect of the treatment. In this method we have, I believe, a palliative remedy of some importance for those cases of epileptiform convulsions which begin unilaterally with a well-defined aura in some part of a limb. It is more than fifteen years since I first recorded some results of this treatment in such cases,[2] and since that time I have employed the same method with success in so many cases of what is called partial epilepsy as to leave no doubt in my mind that it is frequently of great service. In the majority of cases the treatment has a distinct effect upon the number of the attacks, now and then stopping them altogether for considerable periods, and in other instances occasioning a very marked prolongation of the intervals between the seizures. It is true that this does not occur in all cases, even if they are apparently very appropriate in character. I frequently also fail to obtain very beneficial results in cases where the unilateral character is but ill-defined. But certainly as regards that form of epileptiform seizures which has become associated with the name of my colleague,

[1] The first recorded observation of ankle clonus and exaggerated knee phenomenon occurring after an epileptiform seizure we owe to Dr. Hughlings Jackson; vide Medical Times and Gazette, Feb. 12th, 1881.

[2] On the Interception of the Epileptic Aura by Blistering (Practitioner, October, 1868).

Dr. Hughlings-Jackson, the results of this method are distinctly of an encouraging kind.

On the physiological side the strange influence which has been exerted in this case upon the site of the premonitory aura by the application of the blisters is very interesting. There has been a transfer of the aura from the right foot and leg first to the left foot, and later to the right groin. Here again I am able to state that we are dealing with something which is not a chance coincidence but a result of the application. I drew attention to the phenomenon of transfer for the first time, so far as I know, in my earliest paper upon this method of treatment,[3] and have since described numerous examples of it.[4] There is no marked uniformity in the mode of transfer in such cases. For example, in one patient a tickling in the left arm had always preceded the fit. After the application of a blister encircling this limb the tickling was transferred to the left *leg*. In another case characterised by a similar aura, the fits, as well as the tickling, ceased after the application of a ring of blister. In a third a sense of numbness in the *left* wrist was transferred to the *right* wrist. This was a case of cerebral tumour, as a subsequent autopsy showed. Another patient was a woman whose fits had always been preceded by cramp in the *right* hand, and who, after the blister, was affected with cramp in *both hands* before her fits. In the case of a patient whose fits had always been preceded by cramp in the left foot and shaking of it, with numbness of the *left* leg, a ring of blister was applied to this leg and in subsequent attacks it was the *right* leg which became numb and shook. Tingling in the left arm was the aura in another case, and after blistering a jerking of both arms and the left leg would take place at the beginning of a fit. Strangest perhaps of all was the case of a female patient whose attacks always commenced with cramp in the left hand. She had suffered from a severe fit two days before she came to the hospital, and the left hand then still remained quite powerless, as indeed she told us was always the case for a few days after a fit. An encircling blister was applied to the left wrist. Next day the *left* hand had quite regained its power, but the patient complained that the *right* hand had *ipso facto* become weak. A few days later, when she came to the hospital, the dynamometer showed 40° as the grasp of the left hand, and only 18° as that of the right. In a young woman with hemiplegia from old depressed fracture of the skull, convulsion of the muscles of the limbs and face on the opposite side of the body to that which had formerly been affected followed the application of two rings of blister to that forearm which had been the seat of the initiatory spasm. My experience as regards both the therapeutical value of this method and the occurrence of transfer of the aura has quite recently received independent corroboration at the hands of Professor Hirt of Breslau, who has published several interesting examples.[5] In one case of unilateral convulsions without loss of consciousness, in which the attacks were exceedingly numerous every day, and always preceded by a tickling in the left arm above which the blister was applied, the attacks ceased, and did not recur during the six months preceding the report. In a second case, the aura was a trembling of the great toe of the *right* foot. Blistering was followed by cessation of attacks for two months, and in a fit which then occurred it was noticed that the trembling affected the big toe of the *left* foot. A third case is that of a shoemaker, in whom the cessation of attacks consequent on the treatment was attended by such feelings of discomfort as to cause him to regret his previous condition! In another example there was transfer of the aura, which consisted of over-extension of the ourth and fifth fingers of the left hand to the other side. At the same time, as happened also in a case of mine, to which I have just referred, a transitory loss of power, which was wont to be experienced in the right hand for a day or two after the fit, was now noticed in the left limb. In a fifth case there was transfer of an aura in the little finger to the other side. In four of these cases the therapeutical results were highly satisfactory, especially in the second, in which, after the transfer of the aura, rings of blister were applied simultaneously to both feet.

[3] Practitioner, October, 1868.

[4] Clinical Lectures on Diseases of the Nervous System, 1882. Lecture 24: On Phenomena of Transfer produced in Epileptic Patients by the Application of Encircling Blisters.

[5] Ueber das Auftreten von Transfert-Erscheinungen während der Behandlung der partiellen Epilepsie. Neurologisches Centralblatt, No. 1, January, 1884. Leipzig.

Until our information as to the position of receptive centres for impressions of common sensations is more exact than it is at present, it would be idle, I think, to waste much time in speculating upon the *modus operandi* of peripheral irritation in producing these results. There would seem to be sufficient evidence to show that epileptiform convulsion beginning unilaterally depends upon a lesion of the cortex cerebri. Thanks to the clinical researches of Hughlings-Jackson and the experimental observations of Hitzig and Ferrier, we know a good deal about the localisation of centres for movements in the cortex, and something respecting those for certain forms of special sensation. But as regards the situation of the centres which receive impressions of common sensation, we can do little more than infer that the place of reception for impressions coming from the skin covering a limb is probably in close association with the centre for the movement of its muscles. If this be so, the irritation of a blister causing a molecular change, which is propagated centripetally, may be supposed capable of influencing in some way the liberation of movement.

As a matter of detail I would say that in my experience a distinct advantage has shown itself in the blister being employed in the form of a ring or bracelet encircling the limb. An effect has been produced where the previous application of a quadrilateral blister has failed. A ring of blister applied, as it has been in the case of John M——, above the ankles, involves cutaneous branches derived from the lumbar as well as the sacral plexus through the anterior crural and sciatic nerves. A blister acting upon these nerves may be conceived therefore to be capable of producing a more intense impression than one which should only affect the branches derived from one or other of these large nerves. But I am disposed to doubt whether it is requisite to employ blisters so wide as those which I have used in this case. In some of my cases they have been narrower, and, so far as I am aware, this has been no disadvantage. Those which Professor Hirt says that he employed were but half an inch in width, and I think it very probable that a still narrower ring than this would be found sufficient. That is certainly the case when Paquelin's thermo-cautery is used. It is, of course, desirable to avoid inflicting unnecessary discomfort, but, as a rule, I have not found that the pain of the blister presents any serious obstacle to its employment.

Annual Address

Delivered on February 6th at the

OBSTETRICAL SOCIETY OF LONDON,

BY HENRY GERVIS, M.D. LOND., F.R.C.P.,
PRESIDENT OF THE SOCIETY.

(Concluded from p. 331.)

THUS much for our work, our success, and our aspirations in the year that is gone. Would that my few remarks might have ended here, but there yet remains a duty that I would gladly escape, the duty of offering you some slight memorial notices of those whom death has claimed from among us.

[After briefly passing in review the careers of Mr. B. Spaull of Hammersmith, Mr. T. Blease of Altrincham, Mr. Jardine Murray of Brighton, and Mr. Ainsworth Schofield, the medical missionary, of whom obituary notices have already appeared in our columns, Dr. Gervis continued:]

In Mr. Philip Harper, who died on Nov. 29th, we lost an original Fellow of the Society, reducing now the number of those who shared in its inauguration to thirty-eight. Mr. Harper was a Fellow of the Royal College of Surgeons, of the Royal Medical and Chirurgical and Zoological and Entomological Societies. In the earlier years of our Society he was a contributor to our Transactions, and took a frequent share in our debates. In the very first volume of our Transactions I find an important paper from him "On the More Frequent Use of the Forceps as a Means of Lessening both Maternal and Fœtal Mortality," and in looking through his paper and the account of the debate which followed, one cannot but be struck with the change which twenty-five years have brought about in the general estimation of the value of the forceps. Every speaker on that occasion, and

among them I find the great names of Rigby, Murphy, Tyler Smith, R. Druitt, and Barnes, thought the proportion of cases in which Mr. Harper had used the forceps, one in twenty-six, far too high, and some indeed "quite unwarrantable." Twenty years afterwards, in the debate which took place in this room on the use of the forceps, we find this proportion far exceeded by men of the highest position; Dr. Malins of Birmingham, for example, declaring that for five years he had used the forceps once in five times, and with the best results. Dr. Atthill said that during his Mastership of the Rotunda the forceps had been used once in fourteen cases among the in-patients, but still once in twenty-nine among the extern maternity; and Dr. Daly that during a practice of fifteen years he had used the forceps in 10 per cent. of his cases, with a mortality of but two out of the total number. And these examples might be largely multiplied. This, of course, is but a fresh illustration of the changing views which occur in the progress of time with reference to so many questions of practice. I think from it one may fairly learn two lessons: not, on the one hand, to be too dispirited if new views in which we are interested do not at once meet with general acceptance, sustained by the conviction that if based on truth they will certainly win their way; and on the other, when new views not coinciding with our own are advocated by others, not to be too hastily positive that those views must be unsound and unwarrantable. Mr. Philip Harper may, I think, be therefore fairly regarded as one of the pioneers in the movement which placed the forceps in the first position as at once the most important and most trustworthy of our resources in the management of lingering labour.

There now remains for me to say something of those of our honorary Fellows who during the year have also died.

On Dec. 14th, 1882, and so really in the presidency of my distinguished predecessor, died Dr. Carl Hecker of Munich. Strangely enough, no notice whatever of his death appeared in any English periodical, and only by chance, as it were, was the fact noticed by our librarian, Mr. Savage, in the March number of the *New York Medical Journal*. From an obituary notice by Prof. Amann, published in a Munich paper, I am however able to offer you some particulars of Dr. Hecker's life and work. Carl von Hecker was born in Berlin in 1827, where his father was a professor of medicine. After passing through a distinguished university career, and having served in the army as assistant-surgeon, he published in 1853 a work on Retroversion of the Gravid Uterus, and commenced practice in Berlin. In 1858 he was elected in the University of Marburg Professor of Obstetrics and Director of the Lying-in Hospital; but within a very few weeks he was appointed to the much more important Professorship of Obstetrics in the University of Munich. Here he soon gained a great reputation both as physician and lecturer. His first large book, "Clinical Observations in Obstetrics," he published in 1861, in conjunction with Prof. von Buhl, who died three years before him. Besides this, he wrote many valuable essays in professional papers, and so recently as 1881 another large work, entitled "Observations and Inquiries at the Lying-in Hospital at Munich from 1859 to 1879." This contains the result of observation of more than 17,000 births. Besides obstetrics Dr. Hecker took much interest in medical jurisprudence, and edited, after Buchner's death, his work on Forsenic Medicine. He married a daughter of the celebrated jurist and privy councillor von Bluntschle, and his domestic relations appear to have been as happy as his reputation was great and his distinctions numerous. For some three years previous to his death his health had not been good, but up to the day on which he died he had continued to perform all the duties of his appointments. Between five and six in the evening of the 14th he gave his customary lecture to his class, and returned to his family cheerful and lively as usual, "satisfied with himself," says his biographer, "as some one who had well done his day's work." Shortly after seven he died suddenly seated in his arm-chair. Professor Amann concludes his notice of Hecker thus: "Through his excellent work in the field of science, through his useful activity in the different practical branches of his profession during a period of twenty-four years, he gained the high esteem of all scholars, while his affability and social disposition gained him many friends. Thus he lived an active, although too short a, life, and he will long survive in the remembrance of the representatives of science, of the university, of his colleagues, and of his friends. His own words," adds Amann, "which he used in his inaugural address as rector magnificus may give us some consolation for his early death—

> 'Lange leben ist nicht viel leben,
> Viel wirken ist viel leben.'"

I had written the above when I received from Dr. Matthews Duncan—in response to a suggestion of mine that as von Hecker had died during his presidency it would be a gratification to the Society to receive from him some obituary notice of Hecker—the following interesting paper:—

"I have repeatedly been told that Hecker was a man of sufficient private fortune, who, therefore, was able to and did pursue the study of obstetrics and gynæcology from love and respect for these sciences, and untrammeled by considerations which are a strong impulse to most of us to perseverance in work, but which do not do so much to ensure goodness of work as simple love of knowledge does. Hecker's great life occupation was teaching and practising midwifery; and constant hospital attendance was his daily food. His honorary position in this Society, held since 1864, shows how highly he was esteemed abroad; and I know he was held in like honour in his own country. One of our best means of judging a man's value in Germany is his selection to fill high and responsible positions—a professorship in a great university or the charge of a great hospital; and, when speaking with Germans of contests going on for such posts, and especially of the various candidates, I have said, 'Hecker!' and have got for answer, 'Of course, he is our first man; but he will not leave his fine position at Munich, with his beautiful villa and property in the vicinity.' So in Munich he lived, worked, and died. Like other great teachers, he had a large following of admiring pupils, among whom we may name Poppel, whose work on the force of labour will keep his name living in obstetrical history. The power of producing followers and exciting them to good work is a valuable product of teaching. In no one was it more clearly observed than in the great Paul Dubois; and in a less degree it was exemplified in Hecker. His work was all of the best kind, whether it owned his sole parentage or was a joint production with a pupil. Facts and careful observation abound; theory and hypothesis, kept within due limits, luxuriant yet not rank. We know only two volumes by him. One was published in 1861, "Klinik der Geburts-kunde," by Hecker in conjunction with Buhl, the professor of pathological anatomy; the other, under the same title, by Hecker alone in 1881. Both were records of observations and researches made in the Lying-in Hospital of Munich. Besides these volumes, he produced many minor works; and one cannot forget his ingenious paper on the dolichocephalous head as a cause of face presentation, a paper whose results still stand fast, though modified by great additions of other authors, especially by the recent researches of Winckel on the influence of slight contraction of the pelvis in producing this interesting presentation."

On Sept. 27th died Jean Henri Depaul. He was born on July 26th, 1811, and had therefore attained the age of seventy-two. Left an orphan at an early age Depaul was intended by his guardian for business, and was sent with that intent to Paris. But his natural tastes inclined him to the science of medicine, and after at first spending all his free evenings attending the lectures of the École Pratique, he ultimately entered upon the usual hospital course, and in 1832 dressed under Prof. Paul Dubois. With Prof. Dubois Depaul soon became on extremely intimate terms, and continued to devote himself mainly to surgery in association with Dubois for many years. His first hospital appointment was at the Hôpital des Enfants Assistés, where he remained until his election as Professor of Obstetric Medicine in 1862. M. de Soyre, who writes of him in the *Archives de Tocologie*, of which Depaul was editor in chief, gives the following further particulars of his life and character. "M. Depaul" says M. de Soyre "was a man of prodigious activity, which he showed from the commencement of his career by the numerous works which he published, the thorough preparation he made for the various meetings he had to attend, and by making a practice which rapidly became considerable. He performed operations admirably and made an excellent diagnosis. M. Depaul was in general little given to new methods. He only accepted them a long time after their appearance and when they had stood the test of time. It was with respect to the method of preventing the spread of puer-

peral fever in the 'service hospitaliers' that a cloud arose for a time between Depaul and his master, P. Dubois. The latter, in advance of his day, wished to isolate the patients, attributing the frightful mortality which then attacked lying-in-women to the crowded state of the Clinique and the Maternité. M. Depaul was not of this opinion, and it was only later, when he presided over the erection of the new Clinique d'Accouchements, that he observed the new ideas. But only very reluctantly did he ever use antiseptics, and never adopted intra-uterine injections. He never used any forceps but the 'forceps classique.' He was a strong partisan of the induction of premature labour in cases of pelvic deformity, and when this was not available, cephalotripsy was his favourite operation. Without being an orator, he was a fluent speaker. As a clinical teacher, he was particularly attentive to his duties. His reputation was universal. Not only did he constantly receive at the Clinique medical men from all lands, but since the foundation of the *Journal d'Accouchements*, with which his name was associated, he was in close correspondence with most professors of midwifery in Europe." A warm tribute to his personal character closes this sketch of the life and work of Depaul.

Dr. J. Marion Sims was born in South Carolina in January, 1813. He graduated at Jefferson College, Philadelphia in 1835, and in the following year commenced practice in the town of Montgomery in Alabama. He must have early given special attention to gynæcological practice, for in 1845 he established a small hospital with twelve beds for negro women, in which, after what he speaks of as four years of incessant experiment, he worked out the problem of the curability of vesico-vaginal fistula. In 1853 he took up his residence in New York, where he founded the Woman's Hospital; and although for some years, both before and during the Civil War in America, he practised in London and Paris, and for shorter periods at other times, New York was the chief seat of his practice and teaching for the last thirty years of his life. It can, perhaps, scarcely be said that Sims was a man of quite the highest rank in gynæcology; but we are unquestionably indebted to him for two most notable additions to our resources, the use of silver-wire sutures in vaginal and perineal surgery, and the adoption of the principle of perineal retraction in the examination of the uterus by means of the duckbill speculum named after him; and of these two very considerable achievements I am not sure that the latter is not the more important, as by the use of the duckbill speculum not only has the general examination of the uterus been singularly facilitated, but the opportunity of surgical operations on the uterus and vagina, including much more than the treatment of vesico-vaginal fistula, has been greatly enlarged. Over and beyond being the first operator to employ silver sutures in the treatment of vesico-vaginal fistula, there can, I think, be no question that while not originating anything with respect to the operation which was not known before (for even in the matter of metallic sutures he had been anticipated by Gosset of London, who in 1834 used leaden ones), Sims was yet undoubtedly the first who by combining what Dr. Thomas calls the two essentials of success, the use of a speculum by which the vagina could be distended and explored, and a suture not liable to excite inflammation or ulceration, placed the operation on a footing which has rescued vesico-vaginal fistula from being what it previously was, the *opprobrium chirurgiæ*. Of his splendid personal skill in the treatment of vesico-vaginal fistula, the result of persevering work, great natural ingenuity and large opportunities well used, one can speak without hesitation and in the highest possible terms. Of the pamphlet war connected with his surgeoncy to the Woman's Hospital, which ended in his quitting for a time the field of his greatest surgical triumphs, and of the storm of adverse criticism which fell on him in connexion with the publication of his views as to the treatment of sterility in his work on uterine surgery, I need here say nothing. We may be glad, at all events, that those views gained no footing among English gynæcologists, and that it is the deliberate opinion of the profession that when we have done our best to put the generative organs of our patients into a healthy state, we have done all that is required of us towards the establishment or restoration of their functions. But putting aside any discussion of what we may deem to be errors of judgment, and not forgetting that to such all are liable, *humanum est errare*, we shall yet, I think, agree that Marion Sims will ever occupy a niche of honour in the temple of professional fame as a surgeon of highly inventive genius, practical skill, and great resource, and the introducer to general use of the speculum, which has only been second in its influence to Simpson's sound in revolutionising the practice of gynæcology.

With these poor tributes to the memories of those we have lost my present duty ends, but I cannot close this imperfect address without offering my best thanks to the Society for the considerate way in which it has borne with my shortcomings during the year that is past, and to my colleagues in office for their ever ready and efficient assistance. May the year on which we enter to-night surpass the one whose annals have just been occupying us in every element of prosperity!

ON THE

QUANTITATIVE DETERMINATION OF SUGAR FOR CLINICAL PURPOSES BY THE AMMONIATED CUPRIC TEST.

BY F. W. PAVY, M.D., F.R.S.

FOR a long time past I have been intending to give a description of the mode of application of the ammoniated cupric test for clinical purposes. Ever since I brought the test under notice at the Royal Society in 1879, it has been used in the investigations conducted in my laboratory, and also for the quantitative determination of sugar in the urine of my patients. Its accuracy and the ease and rapidity with which it can be applied render it well adapted for clinical use.

The ammoniated cupric test differs from the ordinary copper test in the reduction which occurs, being unattended with precipitation of the reduced oxide. Instead of the result of boiling in the presence of glucose being the formation of a yellow or orange-coloured precipitate, the effect produced is simply a removal of the blue colour of the test, and when sufficient sugar is present for the complete reduction of the cupric oxide the product is brought to the clear colourless state of water. Ammonia, as is known, is a solvent of the suboxide of copper, and the solution is quite devoid of colour. Through this property of ammonia in dissolving the reduced oxide as it is produced (the production of the reduced oxide, be it observed, is not in the slightest degree impeded by the presence of ammonia) there is nothing to interfere, as is the case when the reduced oxide is precipitated, with the gradually advancing process of reduction being watched, and thus nothing to obscure the condition and prevent its being seen when the precise terminal point of reduction is reached. A solution of glucose dropped carefully into a flask containing the test in a boiling state leads to a gradual fading of colour until the point of complete disappearance is attained which is without the slightest difficulty susceptible of recognition.

COMPOSITION OF THE AMMONIATED CUPRIC TEST SOLUTION.

Metrical System.

Cupric sulphate	4·158 grms.
Potassic sodic tartrate (Rochelle salt)	20·400 ,,
Potash (caustic)	20·400 ,,
Strong ammonia (sp. gr. 0·880)	300 cc.
Water to 1 litre.	

English System.

Cupric sulphate	36½ grains
Potassic sodic tartrate (Rochelle salt)	178 ,,
Potash (caustic)	178 ,,
Strong ammonia (sp. gr. 0·880)	6 fluid oz.
Water to 1 pint.	

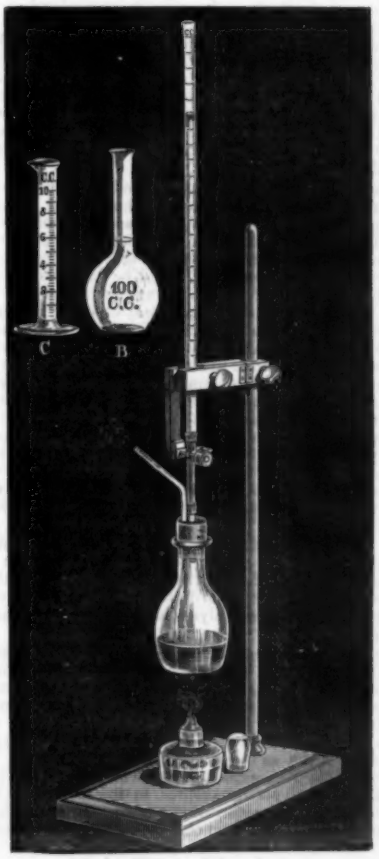
Dissolve the potassic sodic tartrate and potash together in a portion of the water and the cupric sulphate with the aid of heat in another portion; pour the solution of cupric sulphate

into the mixture of potassic sodic tartrate and potash; when cold add the ammonia; and, finally, with water, bring the volume of the liquid to the bulk specified. Ten cubic centimetres of the above liquid is a convenient quantity to work with, and does not call for the employment of any appliance to obviate the inconvenience arising from the evolved ammonia, as I found to be necessary when I first introduced the test and used a larger amount for the analysis. By diluting the specimen to be examined to a greater extent, as much accuracy is attainable as with the employment of a larger amount of the test, and a less dilute liquid. In performing the analysis, twice the volume of water is added to the 10 cubic centimetres of test employed. The 10 cubic centimetres of the ammoniated cupric test are decolourised by, and therefore stand equivalent to, ·005 grm. of glucose. It occurred to me some time back that it would prove a source of convenience for clinical use if the test could be put into the pellet form, so as to be always ready in a fixed state for employment. With the assistance of Mr. Cooper, of Oxford-street, pellets have been produced which meet the requirements, and I have lately tried some which were made upwards of a year ago, and found them perfectly good. They are prepared so as exactly to represent 10 cubic centimetres of the ammoniated cupric liquid, and all that is requisite in using them is to dissolve according to the directions given further on in 30 cubic centimetres (rather over one fluid ounce) of water. Ordinary water if not highly impregnated with lime may be employed, but distilled or rain-water is better. As the ammonia, which is a necessary ingredient of the test, cannot be compressed and retained in the free state, it has to be liberated from one of the salts, and the chloride is the salt which I have found to answer best for the purpose. The liberation is effected by means of potash, but the potash must be kept separate till the moment the ammonia is required. Thus two pellets are needed, the one containing the ammonic chloride with the potassic sodic tartrate and cupric sulphate equivalent to that existing in 10 cubic centimetres of the ammoniated cupric test liquid, and the other the amount of potash sufficient for appropriation in setting free the ammonia from the ammonic chloride, and for supplying the fixed alkali appertaining to the test. When brought into use the pellet with the ammonic chloride is placed in the flask with 20 cubic centimetres of water and dissolved with the aid of heat. The pellet of potash is dissolved in the remaining 10 cubic centimetres of the water required, and when the liquids have cooled down the dissolved potash is poured into the flask and this affixed to the burette.

I refer to the pellets, because for a long time I have thought that they would supply the form of test most likely to be considered preferable for use by the medical practitioner. Quite recently, however, the idea has presented itself to me of placing 10 cubic centimetres of the liquid test in hermetically sealed glass tubes, and for convenience I think I may say nothing better can be desired. The pellets necessitate the presence of a large quantity of saline matter, which gives a certain amount of turbidity to the liquid resulting from their solution, and thus takes away from the sharpness of the terminal point of the analysis. For this reason the liquid test is to be preferred, and in the hermetically sealed tubes there is no reason, as far as I can judge, that it should not keep for an indefinite time. The ammoniated liquid has no tendency to change and become unfit for use, like the ordinary cupric solution. When the tube is used it is held in a vertical direction, and the upper point broken off with the barrel part of a key, or anything else that may be considered convenient. It is then turned the reverse way, and held over the mouth of the flask intended to be employed in the analysis. The other point now being broken off permits the fluid to run out into the flask, and 20 cubic centimetres of water are afterwards added in accordance with the directions before given for the liquid test.

APPLICATION OF THE TEST.

The apparatus required consists of a burette and a glass flask of about 150 cubic centimetres capacity, supported on a stand, as shown in the following sketch.[1] The graduation on the burette is into 20 cubic centimetres, and each centimetre is divided into tenths. Instead of a spring clip, as is usually employed under such circumstances, to regulate the dropping of fluid from the burette, a screw arrangement is provided by which the flow is susceptible of being governed with mechanical precision. To Mr. Hawksley of Oxford-street I am indebted for having devised a most simple and efficient contrivance for carrying out what I expressed to him as required. The cubic centimetre measure (C) figured in the sketch may be used both for measuring out the test liquid and for diluting the urine. It gives sufficiently near measurement for clinical purposes, but a pipette would be employed by the chemist. Pipettes are, however, not so easily managed by those who are not engaged in laboratory work. The 100 cubic centimetre flask (B) employed for diluting the urine and a spirit lamp or gas burner complete the apparatus. On account of the delicacy of action belonging to the test the specimen to be examined requires to be extensively diluted if containing a significant amount of sugar. With moderately strong saccharine urine dilution to the extent of



1 in 20 is found to be a convenient point. When very highly saccharine, 1 in 40 may be desirable, and when only slightly saccharine, 1 in 10. The dilution should be such as to render from about 3 or 4 up to about 7 or 8 to 10 cubic centimetres required to decolourise the 10 cubic centimetres of the test. For the dilution, either 5, 2½, or 10 cubic centimetres (according as it is desired to dilute to 1 in 20, 1 in 40, or 1 in 10) of the specimen are measured out in the small cubic centimetre measure glass, and poured into the 100 cubic centimetres flask. The flask is then filled with water to its measure line, the cubic centimetre measure glass having been rinsed out into it with some of the water employed. After being shaken and thoroughly mixed the contents of the flask are poured into the burette, and a little allowed by the screw clip to run out, in order that the tubing below may be filled.

The 10 cubic centimetres of the test liquid are now measured

[1] The apparatus is procurable from Mr. Cooper of 58, Oxford-street, and also from Messrs. Griffin of 22, Garrick-street, Covent-garden.

out and placed in the flask intended to be attached to the burette. When placed in the flask, 20 cubic centimetres of water are added, and by the water thus used, the cubic centimetre measure is rinsed out. If the test liquid contained in the hermetically sealed tube is used, the ends of the tube are broken, as previously directed, and the contents allowed to escape into the flask, and 20 cubic centimetres of water added. Ordinary water will do, unless highly impregnated with lime. Distilled or rain-water gives a liquid yielding a more sharply defined result. The flask is now affixed to the cork belonging to the burette, and heat from a spirit lamp or gas burner applied underneath. When its contents have well commenced to boil, the screw which governs the flow from the burette is turned so as to allow the liquid to escape by drops, at the rate of about 60 to 100 per minute, according to the effect produced upon the colour of the test. What is wanted is a gradually advancing decoloration, until the contents of the flask are brought to the colourless state of water; and towards the end, the dropping has to be conducted more slowly than at first, so as to avoid going beyond the exact point required. When this point is attained, the screw is turned to stop the further flow. The level of the liquid in the burette having been read off before starting, a second reading at the termination gives the amount of the liquid being examined which has been required to decolorise the 10 cubic centimetres of the test, and which thus contains 5 milligrammes of glucose.

If in performing the analysis the contents of the burette are dropped in too slowly, and the boiling becomes too prolonged, the suboxide falls in consequence of the dissipation of ammonia, before the operation is completed. Should this event occur, a fresh analysis must be performed, and the contents of the burette dropped in a little more quickly. If suboxide has collected upon the surface of the flask it must be removed with a little nitric or other mineral acid, for a dirty flask tends to promote the deposition of suboxide before it would otherwise occur. The chief precautions, it may be said, to observe are not to drop in from the burette with sufficient rapidity to run the risk of passing beyond the point required for decolouration, and at the same time not to drop in so slowly as to lead to a deposition of suboxide from the expulsion of the ammonia. With everything conveniently at hand a few minutes only are required for the performance of the analysis from beginning to end. It is easy for anyone to convince himself of the delicacy and reliability of the test by examining two specimens containing different amounts of sugar, and then mixing them together in equal quantities, and examining the mixture. The amount of sugar in the mixture will be the mean of that in the two specimens, and this, the analysis of the mixture, will be found with striking closeness to reveal, if the analyses have been properly and carefully performed.

The analysis having shown the quantity of the contents of the burette required to decolourise the 10 cubic centimetres of the test, and therefore containing 5 milligrammes of glucose, it now only remains by a simple rule of proportion calculation to bring the expression to any form desired. There are reasons to render it advisable that the expression should be given as parts per 1000, and it would be convenient if this plan, agreeing with what is done on the Continent, were universally adopted in this country. Suppose 4 cubic centimetres constituted the amount of diluted urine required to decolourise the contents of the flask, then—

$$\text{as } 4 : \cdot005 :: 1000 : 1{\cdot}250$$

$$\text{or } \frac{\cdot005 \times 1000}{4}, \text{ or } \frac{5}{4} = 1{\cdot}250$$

To save the trouble of calculation the following table may be consulted. It gives for cubic centimetres required to decolourise the quantity of sugar in parts by weight per 1000 by volume. All that is necessary after the analysis has been completed is to look against the number of cubic centimetres required to decolourise, and the quantity of sugar per 1000 is found expressed.

It must be remembered that the quantity here expressed represents that which exists in the liquid examined. This liquid consisted not of the urine itself, but of diluted urine, and the figures must be multiplied according to the extent to which the dilution was carried. For instance, with 5 cubic centimetres of urine and water to 100 cubic centimetres the figures must be multiplied by twenty; with 2·5 cubic centimetres of urine and water to 100 cubic centimetres, by forty; and in like manner for other proportions.

Table showing the Amount of Sugar Expressed in Parts (by weight), per 1000 (by volume), corresponding with Cubic Centimetres, in 10ths, required to Decolourise 10 c.c. of the Ammoniated Cupric Test.

Cubic centim. to decolourise.	Parts per 1000.	Cubic centim. to decolourise.	Parts per 1000.	Cubic centim. to decolourise.	Parts per 1000.
1·0	5·000	5·7	·877	10·4	·480
·1	4·545	·8	·862	·5	·476
·2	4·166	·9	·847	·6	·471
·3	3·846	6·0	·833	·7	·467
·4	3·571	·1	·819	·8	·462
·5	3·333	·2	·806	·9	·458
·6	3·125	·3	·793	11·0	·454
·7	2·941	·4	·781	·1	·450
·8	2·777	·5	·769	·2	·446
·9	2·632	·6	·757	·3	·442
2·0	2·500	·7	·746	·4	·438
·1	2·380	·8	·735	·5	·434
·2	2·272	·9	·724	·6	·431
·3	2·173	7·0	·714	·7	·427
·4	2·083	·1	·704	·8	·423
·5	2·000	·2	·694	·9	·420
·6	1·923	·3	·684	12·0	·416
·7	1·851	·4	·675	·1	·413
·8	1·785	·5	·666	·2	·409
·9	1·724	·6	·657	·3	·406
3·0	1·666	·7	·649	·4	·403
·1	1·612	·8	·640	·5	·400
·2	1·562	·9	·632	·6	·396
·3	1·515	8·0	·625	·7	·393
·4	1·470	·1	·617	·8	·390
·5	1·403	·2	·609	·9	·387
·6	1·388	·3	·602	13·0	·384
·7	1·356	·4	·595	·1	·381
·8	1·316	·5	·588	·2	·378
·9	1·281	·6	·581	·3	·376
4·0	1·250	·7	·574	·4	·373
·1	1·219	·8	·568	·5	·370
·2	1·190	·9	·561	·6	·367
·3	1·162	9·0	·555	·7	·364
·4	1·136	·1	·549	·8	·362
·5	1·111	·2	·543	·9	·359
·6	1·086	·3	·537	14·0	·357
·7	1·063	·4	·531	·1	·354
·8	1·041	·5	·526	·2	·352
·9	1·020	·6	·520	·3	·349
5·0	1·000	·7	·515	·4	·347
·1	·980	·8	·510	·5	·344
·2	·961	·9	·505	·6	·342
·3	·943	10·0	·500	·7	·340
·4	·925	·1	·495	·8	·337
·5	·909	·2	·490	·9	·335
·6	·892	·3	·485	15·0	·333

Should it be desired to convert the expression into grains to the fluid ounce, multiply the amount per 1000 by ·4375.

ON THE COLD BATH TREATMENT OF ENTERIC FEVER.

BY SIDNEY COUPLAND, M.D., F.R.C.P.,
PHYSICIAN TO THE MIDDLESEX HOSPITAL.

(*Concluded from p. 335.*)

I PASS now to consider more particularly the eighty-nine cases consecutively under my care in the Middlesex Hospital from 1879 to 1883, which include patients of all ages, from three to forty years, fifty-one being males. As may be expected, the cases were of all degrees of severity, and antipyretic treatment of some kind was adopted in the majority of them. By the kind permission of the Council I have been enabled to place in your hands a summary of these cases, arranged in a tabular form according to the day of the attack (reckoned as nearly as possible) upon which the patient was admitted. The tables were drawn up with a view of showing the period of adoption and the nature of the antipyretic measures; and a tolerably fair notion of the relative severity of the cases, *quoad* pyrexia, may be gathered from the frequency with which the treatment was had recourse to. The difference in the severity of the cases in which baths were had recourse to, and those in which no baths were

given, may also be indicated by noting the duration of the stay in hospital of those which recovered.

Amongst the bathed cases.

Cases.	Admitted in the	Average stay.	Relapsed.
18	1st week	50·4 days	2 cases
27	2nd „	58·4 „	6 „

Amongst the cases not bathed.

Cases.	Admitted in the	Average stay.	Relapsed
9	1st week	40·0 days	1 case
13	2nd „	42·5 „	0 „

In fifteen cases no antipyretic measures were taken, and in none of them was the fever high; in some extremely mild. In eighteen cases the measures were limited to occasional cold sponging or compresses, or the administration of quinine or salicylate of soda. Some of these cases were severe, and in a few the bath was only withheld because of the condition of the patient. Again, in thirteen cases, in addition to other measures, only one bath was given; and in thirteen others from two to four baths. In eleven cases the number of baths was five, but less than ten; in sixteen cases it was ten, but less than twenty; and in only three was it deemed necessary to give more than twenty baths. It is plain, therefore, that so far as the bath treatment is concerned, it has been employed only as one means to the general end; and the table shows how often other measures were employed to aid in the control of the fever. Therefore I cannot claim to be a strict follower of Brand's instructions, any more than I am as regards the temperature at which bathing was had recourse to. And in the nature of things it was seldom possible to commence bathing very early in the disease. But the attempt was made in every case to get the full effect of antipyretics in one way or another; and now that I am enabled to pass the whole series of cases in review, I cannot feel dissatisfied with the result. In some cases the occurrence of hæmorrhage, or great aversion on the patient's part, compelled the disuse of the bath, the latter reason, also, in some cases preventing its adoption at all.

I shall not attempt to present a complete analysis of all these cases, but may refer briefly to the leading symptoms present in the nineteen which were bathed from ten to forty-eight times, these being perhaps the most severe of the whole series; for in all, without exception, the temperature attained 104° at least once, in spite of the controlling measures, and in twelve of them the pulse rate during the height of the fever was 120, while in a few it reached 140. Diarrhœa was marked in ten of the cases; in the rest constipation was more the rule. In one case there was profuse hæmorrhage, leading to the abandonment of bathing after twenty-four baths had been given; and this patient, a woman thirty-three years old, recovered. There was slight hæmorrhage noted in three other cases, in one shortly after admission and before any baths were had recourse to. In most of the cases there were bronchitic signs; but the bronchitis could only be said to be severe in three, in which there were also signs of hypostatic congestion, and, except in one case, in which the fever could not be thoroughly controlled, the pulmonary condition did not notably increase under the treatment. Occasional transient and mild delirium occurred in seven of the cases; it was severe, and accompanied by insomnia and tremors in the case just referred to as resisting the antipyretic effect of the bath. In one case there was slight albuminuria. Four cases relapsed, but in most the duration of the fever was prolonged, the average stay in hospital of the seventeen cases that recurred being eight weeks. Yet sequelæ were few—viz., periostitis in one, axillary abscess in another, and bedsores in a third.

I can best illustrate the practice by briefly relating the particulars of two cases. I select these cases, because in the one the bath treatment was actively employed from the first, and in the other it was used in a relapse. The subject of the first case was a thin delicate lad, twelve years old, admitted on Nov. 8th, 1880. He was liable to attacks of bronchitis, and his illness, which commenced with headache, muscular pain, debility, cough, and later diarrhœa, had lasted about a week before his admission. His aspect was depressed, skin dry, but no rose-spots could be seen; the temperature was 102°. The belly was tympanitic, and the "tache" was readily elicited. Marked bronchitic rhonchi, but no dulness at bases of lungs; respiration 30; pulse weak (120); heart sounds feeble, and cardiac impulse very readily visible through the thin parietes. No increase in the normal area of splenic and hepatic dulness. At 7 P.M. on the day of admission the temperature rose to 104·4°, and he was placed in a bath of 70° for ten minutes, which reduced the temperature to 99·6°. The bath was repeated at 10 P.M., the temperature having risen to 103·8°, and a dose of quinine (ten grains) was given afterwards. The next day, the ninth of his illness, the temperature only once rose above 103°—viz., at 7 P.M., when a third bath was given, but with less effect, for in eight hours the temperature was again 103·8°, and a fourth bath was given. During this day, the tenth, the temperature rose very rapidly, and no fewer than seven baths were given, the effect of each being to reduce the temperature from nearly 104° to 100° or 101°. A dose of quinine was prescribed after the last bath given at midnight. During the eleventh day he had four baths given at varying intervals, only one being required in the forenoon, showing apparently the value of the quinine in controlling the pyrexia; the maximum temperature on this day was 103·4°. On the twelfth day he had one bath in the forenoon, and three from 3 P.M. to 9 P.M., the temperature having risen rapidly on each occasion to 104·4°, 104·8°, and 104·2° respectively. On the thirteenth day six baths were given at about regular intervals, the temperature only occasionally mounting up to 104° by the time the bath was prepared. On the fourteenth day the fever was at its height, for in spite of watchfulness it attained 104·8° and 105·2° on two occasions; seven baths were given on this day. On the fifteenth day, four baths were given, all afternoon, the temperature not reaching above 103·6°. On the sixteenth day six baths were given until 3.30 P.M., when, owing to the motions being tinged with blood, this treatment was suspended, and cold sponging practised at intervals during this day and the following. The signs of hæmorrhage not being repeated, and the sponging proving ineffectual to control the pyrexia to any marked extent, three baths were given on the eighteenth day after 6 P.M., and the last, or forty-eighth bath, was given at 3 P.M. on the nineteenth day, from which time the temperature never rose again to 103°. For some days there were considerable fluctuations in temperature—as much as three or four degrees between the morning and evening records; but a week later—namely, on the twenty-fourth day—a normal temperature both morning and evening indicated that defervescence had occurred. A week later there was a slight and transient recurrence of pyrexia, but no true relapse. The case was a severe one; for although the diarrhœa was not marked, only about one or two loose motions daily, and on one occasion only any sign of hæmorrhage, yet there was considerable tympanites, and very marked bronchitis, which was not influenced either for good or ill by the immersions. The main anxiety lay rather in the indications of the pulse, which was throughout feeble, and its rate on the thirteenth day as high as 156; so that alcohol was not sparingly given. But a notable feature was the entire absence of delirium, and the fact that he slept well in the intervals of the bathing. He took nutriment well, but convalescence was rather slow, the emaciation and debility being very marked. His stay in hospital, about seven weeks, was not, however, so prolonged as in many cases.

The other case I have selected is that of a bricklayer, twenty-six years old, admitted on July 12th, 1881, in the second week of his illness, his previous health having been good and his habits temperate. He was a well built muscular man, but very prostrate on admission. Abundant rose rash; no distension of belly; no evidence of splenic enlargement. Temperature 102°; pulse 120; respiration 24. He had a short cough, with muco-purulent expectoration; and physical examination revealed abundant rhonchi over the chest; weak breathing at the bases of lungs. At 6 P.M., the temperature being 103°, sponging was prescribed, and was repeated whenever the temperature rose to 103°, which it did repeatedly during the night. On the next day (about the thirteenth of his illness) the temperature was 104·2° at noon, and he passed blood in the motions. Quinine was given—twenty grains in two doses—but it excited vomiting, and the hæmorrhage recurred, but at no time after this. From the fifteenth to the twentieth day the pyrexia was mild; maximum temperature about 100°, with normal temperatures in the morning. The bronchitis, however, persisted, and the patient's debility and loss of flesh increased. On the twenty-fifth day a recrudescence (if not a true relapse) of the fever occurred, the temperature rising to 102°, and on the twenty-sixth day to 103·6°, when quinine was given. He complained of abdominal pain, but there was no diarrhœa.

From the twenty-sixth to the thirtieth day the temperature was frequently above 102°, quinine being given in ten-grain doses at intervals without much appreciable effect. At 3 P.M., on the thirtieth day, the temperature being 103·8°, he was placed in a bath of 78° for fifteen minutes; this reduced the temperature to 99° (half an hour after removal from the bath), but it rose again to 103° in six hours, and the bath was repeated. On the thirty-first day he had two baths, on the thirty-second five baths, on the thirty-third two baths, on the thirty-fourth four, on the thirty-fifth two, and on the thirty-sixth one, the temperature often being 104°, and once 105°—i.e., eighteen baths in seven days. This relapse, if it may be so called, was also characterised by an abundant crop of rose spots, by slight diarrhœa, by the spleen becoming palpable, by great depression, by the tongue being dry and brown, and by the persistence of marked bronchitic signs. The pulse rate rose from 100 to 144 on the thirty-fifth day, and the cardiac sounds became very feeble. On August 9th—i.e., about the fortieth day—the temperatures were normal in morning and evening, and the bronchitis had nearly disappeared. He had only just entered upon convalescence and was still very feeble, when he insisted on leaving the hospital on August 18th.

These cases will suffice to indicate the line of practice—viz., to employ the bath as an antipyretic agent, and to continue its use without intermission, unless in the presence of some contra-indication as the occurrence of intestinal hæmorrhage, so long as the temperature rose above 103°, severe bronchitis notwithstanding. It will be seen that the temperature of the body often exceeded this limit when a bath was given, but this merely means that in the hour or two hours that elapsed between one thermometric observation and another, the temperature had passed from below 103° to above it; and I do not think it would have been advisable in any case to give more baths within the twenty-four hours than was given on some of the days in the first case. Nor were these cases treated with the rigor prescribed by Brand, not only as regards the temperature at which they were bathed, but as regards the temperature of the bath; and in the second case it is quite possible that the severity of the relapse owed something to the lack of rigid antipyretic measures in the primary attack. Nor was the feeble circulation allowed to interfere with the adoption of the treatment, although necessarily forming an anxious element in the cases. Lastly, the value of the antipyretic measures in preventing cerebral symptoms was well shown.[1]

Whilst refraining from inflicting upon you details of any other of the cases, which terminated in recovery, I think it right and necessary to indicate the leading features of the seven *fatal* cases that are to be found in this series.

CASE 1.—A man aged thirty, admitted in his fourth attack of rheumatic fever on Feb. 15th, 1883. He had a mitral bruit, but his rheumatism yielded rapidly to salicylate treatment. He was in a bed adjoining a severe and prolonged case of enteric fever; but, when a week after he had been allowed to get up he again showed febrile symptoms, the idea that he had contracted this disease was not at first entertained, especially as the pyrexia was accompanied by a slight return of arthritis. For nearly three weeks he had irregular pyrexia, without any abdominal signs, and then came a period of apyrexia of about a week, to be followed with what proved to be a severe and fatal enteric relapse. Diarrhœa set in, crops of rose spots appeared, and the fever became high, so that on the fourth and fifth days of the relapse he had in all four baths at 78° for fifteen minutes, having been taking ammonia and salicylate of soda regularly since the pyrexia first set in. On the seventh day of the relapse there was intestinal hæmorrhage, and on the eighth perforation, followed by acute peritonitis, and rapid collapse. The post-mortem examination showed recently inflamed and swollen follicular glands in the intestine, with sloughing and partially cicatrised ulcers. There was recent as well as chronic mitral endocarditis. This case was an instance of a not infrequent event in the history of typhoid fever—viz., a mild primary attack followed by a severe relapse, and it is specially instructive in the light it throws on such cases in the fact that, owing to its nature being unsuspected, the diet during the primary attack was not rigidly restricted.

CASE 2.—A fishmonger, nineteen years of age, admitted on Feb. 2nd, 1882, towards the close of the third week of his illness, with high fever, much tympanites and diarrhœa. During the first six days ten baths were given, with occasional sponging in the intervals. About thirty hours after the last bath he was attacked with severe abdominal pain and vomiting, followed by evidence of acute peritonitis; he survived five days, a second attack of severe pain occurring twelve hours before death. The post-mortem revealed twelve denuded and deep ulcers in the ileum, three of which had perforated.

CASE 3.—A married woman, twenty-one years of age, admitted on November 21st, 1883, in an enfeebled, emaciated state, with high fever (temperature 105°) and distended abdomen. She had been ill for six weeks, having apparently passed through a primary attack of the fever three weeks before. One bath was given, perhaps without due caution; although signs of perforation did not appear till the following day. The lesions were limited to the lowermost ten inches of the ileum, where deep ulcers, with partially detached sloughs, occurred; in one of these the necrotic process had extended through the serous coat.

CASE 4.—A labouring man, twenty-four years of age, thin and worn, was admitted on Nov. 28th, 1881, towards the close of the second week of illness. There was considerable bronchitis and pulmonary congestion, a feeble, rapid pulse, much tympanites, diarrhœa, and abdominal pain. No bath was given, but sponging was practised. He died from the effects of perforation eight days after admission, most of the intestinal ulcers being still covered with adherent sloughs.

CASE 5.—This case, the other death from intestinal lesion, was that of a domestic nurse, aged thirty-four, who was admitted on Oct. 2nd, 1883. She had contracted the fever in Scotland four weeks before, and the disease must have been specially malignant, since two out of four members of the family who fell ill at the same time also died. For the first week from her admission there was constipation and but mild pyrexia, then diarrhœa set in and the temperature rose. From Oct. 13th to 17th nine baths were given. On the 18th some blood appeared in the motions, and the antipyretic treatment was limited to the application of compresses, followed later by kairin, which was only given for two days. On Oct. 23rd, or three weeks after admission, the hæmorrhage recurred and became uncontrollable, death occurring on the 27th. There was most extensive and severe ulceration, involving not only the ileum but also the large intestine in its whole extent, especially in the cæcum (the source of the bleeding), ascending and transverse colon. In the ileum were two large necrotic areas involving all the coats, so that perforation was inevitable had life been prolonged a few hours.

CASE 6.—I need only allude to this case, that of a young woman, twenty-one years old, admitted Oct. 10th, 1883, in which, owing to the existence of mitral stenosis and cardiac dilatation, aided doubtless by the effect of the fever, death occurred from cardiac thrombosis some weeks after the fever had passed away. The case was not diagnosed as, nor treated for, enteric fever, presenting none of the features of the disease.

CASE 7.—I have reserved to the last mention of the only case of the series in which death could be directly attributed to the intensity of the febrile process itself. A young carpenter, seventeen years old, of good physique, and whose health had always been good, was admitted on Oct. 26th, 1882. He stated that he had been "feverish" four weeks before, but that he continued at his employment in spite of headache, anorexia, some abdominal pain, and diarrhœa. On the 25th he vomited, and was attacked with shivering. He was admitted next day. Temperature 104·8°; pulse 116; respiration 44; and for twenty-four hours the fever, being uncontrolled, attained great heights (hyperpyrexia, 105·8°). At 1 P.M. on the 27th, the temperature being 105·8°, he was given a bath at 70° for fifteen minutes. In half an hour after the temperature was 104·2°, and at 4 P.M. 103·6°. The bath was repeated at 5 P.M., and again at 7 P.M., the third being followed by quinine (twenty grains). The later baths were prescribed of a higher temperature (viz., 85°), and of a longer duration (thirty minutes), than the earlier, as the colder ones produced so much shivering that it was feared the reactive rise in temperature might be partially due to this. Throughout the case there was a copious rose-rash, and in the later days diarrhœa, some delirium, very rapid pulse, signs of pulmonary engorgement, and shortly before death profuse epistaxis.

I remember at the time considering that in this case we had lost valuable time in not commencing antipyretic treatment from the very first, and in not more determinedly

[1] I have prepared for publication in the Transactions of the Society records of all the cases included in this review, to form an appendix to the paper.

pushing it; but it never occurred to me then, nor, on further consideration, does it seem to me now, that the treatment pursued intensified the febrile process. Hyperpyrexia does not always yield to treatment; indeed, until the value of cold was demonstrated in dealing with it, it used to be invariably fatal. But there are many cases in which this treatment has been thoroughly pursued in rheumatic hyperpyrexia without avail. I consider this lad was the victim of this remarkable and uncontrollable febrile disturbance, and think it not unlikely that had more care been taken of him in the primary, though mild, attack to which this was the relapse the hyperpyrexial condition might never have been developed. The post-mortem showed fluidity of blood, blood-stained serum in the serous sacs, pulmonary engorgement with apoplexies, greatly swollen spleen (20½ in.) and liver, swelling and infiltration of the intestinal follicular glands, and a few denuded ulcers.

I have thought it right to dwell more particularly upon these fatal cases in order to be sure whether the line of treatment had any influence in inducing the fatal termination, and especially whether the employment of the bath could be charged with this. I have just expressed my view as to the solitary case of death from pulmonary congestion, with hyperpyrexia; but I imagine the chief point of attack upon the treatment will be that it may favour intestinal hæmorrhage,[2] and perhaps induce perforation of the bowel. Undoubtedly in a severe case, which comes under treatment late in the disease, the risk of perforation from the slightest disturbance is a very pressing one; and in one of my cases, which was admitted in a relapse in the sixth week, the placing her in a bath may have determined the fatal rent. But neither in this case nor in any of the others did the signs of perforation occur until some hours had elapsed after the bath; so that we have no positive evidence that either the disturbance caused by the moving of the patient or the possible excitation of undue peristalsis from the application of cold to the surface (if such be possible) was really the cause of the mischief. Again, is it not a fact that perforation is due to the extension of the necrotic process through the serous coat? And when perforation is induced by undigested substances, is it not because of the direct injury inflicted on an ulcer whose base is only formed by the serous coat? In spite, then, of the striking increase in the last few years of mortality from intestinal lesions at the Middlesex Hospital, I see no reason to attribute it to the treatment. Some of these cases I find on inquiry were admitted after perforation had occurred; in others it took place very soon after admission; but although many of the remainder had baths in their course, the striking and obvious signs of perforation in hardly one instance coincided with the time of taking the bath. At the same time, it is a wise precaution not to run the risk of hastening what is, I fear, in all these cases, an inevitable sequence of the deeply ulcerated bowel; and therefore it may be both prudent and wise to withhold bathing from patients admitted with marked tympanites and other signs of severe ulceration, and rest content with the effects of the application of compresses and the administration of opiates. Only within the last fortnight a young girl has died in my ward from this untoward circumstance, and for these very reasons I did not resort to the bath in her case at all; and a few days later a child was admitted moribund from the same cause. One other remark on this point. It is only in the last three years, and more especially in 1883, that the mortality from intestinal lesions has been so high in the Middlesex Hospital; and, in face of this, it is justifiable to assume that the type of the fever recently has been marked by severe and deep ulceration of the intestine.

In the course of this paper I have said very little of the opinions of others on the subject of the cold bath treatment, but before I conclude I should like to advert to the very decided opposition manifested to it by some of the leading physicians in Paris twelve months ago in the course of a debate upon typhoid fever at the Academy of Medicine,[3] which commenced on October 24th, 1882, and was continued every week until its close on March 20th, 1883. The debate ranged over the whole subject of typhoid fever, its etiology, prophylaxis, mortality, and therapeutics. So far as the last-named topic is concerned the matter was raised by M. Herard advocating large doses of quinine, and also referring to salicylic and carbolic acids, and to cold baths as being sometimes of service. M. Dujardin Beaumetz declared himself a supporter of "armed expectation," and said that he had out of eighty-seven cases only lost four. The cold bath treatment had, he said, been abandoned in France because it exposed the patient to the dangers of pulmonary congestion. He averred that whereas baths only lowered temperature, sponging acted on the nerve centres. M. Hardy, the President, followed on the same side, and condemned quinine and salicylic acid equally with the bath. "Hyperthermia" was, he said, the *bête noire* of some, and he ridiculed the energy put forth to combat it. The thermometer had usurped the pulse, whose indications were of far greater significance. On January 9th, 1883, the debate was kindled anew by the reading of a paper by M. Glenard of Lyons, upholding Brand's method, contrasting the French and German army mortality statistics of typhoid, and declaring that no one had a right to judge of the alleged efficacy of the treatment as practised by Brand who did not faithfully act up to its principles. M. Glenard's paper was accompanied by a statement signed by twenty-two of the twenty-four hospital physicians of Lyons, concurring in his views—surely a remarkable testimony. The Academy referred this paper to a committee, who reported mainly on the subject of mortality in the army. M. Germain Sée in a long address reviewed the whole subject of the treatment of fever. He was opposed to the cold bath; said that its advocates could not agree amongst themselves; asserted that fever was rather increased than lessened by the refrigeration of the surface, which drives the blood from the periphery, and maintained that increased oxidation and disintegration was produced by it; statements which it may be observed are directly contrary to the recent very laborious research of Sassetzky,[4] as well as those of other observers. Moreover, M. Sée declared that this treatment induced acute pneumonia, that it greatly increased the liability to intestinal hæmorrhage, that it enfeebled the heart, and, in short, that it was dangerous, and not to be compared in efficacy with the effects of cold affusion and sponging. M. Bouley, who was the only speaker in favour of the method, staunchly supported Glenard's contention. M. Jaccoud deprecated the tendency to regard the pyrexia as the whole disease, and supported expectant methods. Of the two Lyons physicians who did not sign the attestation, one, M. Teissier, sent a letter to the effect that he reserved cold bathing for hyperpyrexia, believing that the systematic method of Brand was answerable for pleurisies, pneumonias, pericarditis, and intestinal hæmorrhage; the other, M. Bondet, extending the catalogue of disasters by the addition of syncope, apoplexy, rheumatic fever, and periostitis. To this M. Bouley rejoined by producing further testimony from Lyons, notably in letters by MM. Renaut and Chauveau. By far the most determined attack came from M. Peter, who had six years before written powerfully against the method. According to him this "vulgar, blind, empirical, and detestable practice of giving cold baths, *coup sur coup*," was responsible for fatal cases of pulmonary congestion, for hæmorrhages, including one form hitherto foreign to typhoid fever—viz., hæmoptysis, and for pulmonary inflammation. It was a "pompier's" duty this of quenching fever by the cold bath; nor was it based on Currie's doctrine that of stimulating the nerve-centres; it was simply attempting to reduce fever heat. Why, he asked, if it were so useful, had not the English, who are a practical and a patriotic people, followed the example set them nearly a century ago by their countryman Currie? M. Peter cited cases known to him of death from pulmonary congestion, and concluded his remarks by enumerating many "systems" of treatment which had enjoyed a brief popularity amongst the simple, the rash, and the incompetent ("*naifs, imprudents, et incompétents*"). To this vigorous counterblast M. Bouley replied, pointing out that M. Claude Bernard, then, must be classed among the "simple" ones; but M. Peter had the last word, and the Academy clearly sympathised with him.

I do not suppose it would be possible to find in medical literature more discordant opinions upon a question of the value of a particular mode of treatment of a disease than we have here. On the one side an unbounded faith in its efficacy, on the other a most decided opinion that it is dangerous, and responsible for increasing the mortality from the disease in which it is adopted. I have already indicated

[2] Upon this question I agree with Dr. Cayley, who has pointed out that intestinal hæmorrhage does not occur more frequently under bathing; and that it is a common practice to use cold to the surface to check internal hæmorrhage.

[3] Bulletin de l'Académie de Médecine, Paris, 1882 and 1883.

[4] Virchow's Archiv, 94. Dec. 1883.

the conclusion to which my own experience has led me, which is in total opposition to the views held by these latter authorities whose opinions one cannot but respect. Pulmonary congestion, instead of being favoured by the treatment, is, in my experience, notably diminished; pulmonary hæmorrhage I have never seen; pneumonia is less frequent, and has never appeared to be provoked by it; intestinal hæmorrhage has not occurred more frequently than on the expectant plan; but naturally it is met with in the more severe cases, which are precisely those in which more frequent recourse is had to the bath. How can I, then, acquiesce in such a condemnation, and to what other conclusion can I come than that the experience of the objectors is based on imperfect data, and that they have mistaken the natural course of the fever for the ill-effects of a therapeutic measure, perhaps adopted in a way wholly different from its original promoter's intention? Convictions like those of M. Glenard, and of his *confrères* at Lyons, cannot be shaken by *ex cathedrâ* statements of authorities however high, nor by any amount of sarcasm or ridicule; nor is it just to say that the antipyretic treatment is pursued in disregard of other indications, notably the pulse. It might as well be urged that the cold bath had replaced the dietetic rules which govern the whole mangement of a case of enteric fever. But the thermometer is the main index of the pyrexia; and the pyrexia, if long-continued, is so grave an element of danger, directly and indirectly, that it must be combated. It can only be successfully controlled by the unceasing application of antipyretic measures, and the earlier resort is had to them the greater the hope of success.

What, finally, are the good effects that may be expected from the steady pursuit of these measures? I think they are mainly these:—If commenced early enough, and carried out systematically, it may curtail the disease by rendering it abortive; but that as it is practically impossible either to be certain of the nature of a pyrexia at its inception, and therefore to commence antipyretic measures so soon as might be desired, it may be conceded that if it do not exert any control over the progress of the intestinal lesions it does appreciably diminish the dangers to life due to pyrexia itself, and place the patient in a better condition. For under antipyretic treatment nervous symptoms are allayed, sleep favoured, delirium banished or much reduced. The prostration is less, the so-called "typhoid" state is mostly conspicuous by its absence. The pulse gains in force, and the tendency to pulmonary congestion and collapse of lung, which endangers life in the early weeks of every severe case of enteric fever, is obviated. Further, the digestive and assimilative functions are improved, so that the difficulty is to avoid yielding to the patient's desire for a solid diet, before defervescence has occurred; and, at the close, the patient's mental and physical vigour is far more speedily restored, and such sequelæ as mania and other conditions indicative of profound nutritional disorder of the nervous system rarely occur. It does not appear to increase the liability to intestinal hæmorrhage or to perforation, which depend on the severity of the local lesions. And it reduces the mortality from the disease.

As to the rules, so far as it is possible to formulate any, of the treatment, they may be summed up as follows:—The patient should be as lightly covered as possible, and whenever the temperature reaches 102° sponging should be practised; but if, as mostly happens, the pyrexia cannot be adequately controlled by this measure, then the bath-treatment may at once be commenced. The temperature of the bath may be about 75°, and the time of immersion ten minutes; but this may be varied, as already explained. If possible the bodily temperature should not be suffered to rise above 103° without having recourse to the bath; and if this entail the repetition of the bath more than every three hours sponging may be practised in the intervals, or quinine given after a bath. The treatment must not be abandoned in the face of pulmonary complications, as bronchitis, congestion or pneumonia; but when necessity compels a resort to it in the later stages of the fever, and symptoms of grave intestinal lesion are present, caution should be practised in bathing, for which it is well often to substitute the application of compresses or cold sponging. If there be intestinal hæmorrhage or signs of peritonitis, the bath must not be given. Although by aid of stimulants bathing may safely be practised when the pulse is rapid and feeble I should regard extreme debility, especially in old subjects, or the presence of organic heart disease, as distinct contra-indications for its employment. It is not prudent to relax rigid dietetic rules, although the patient, under the influence of the treatment, may have his digestive functions so improved as to create a craving for solids before actual defervescence sets in.

To pursue the antipyretic treatment of enteric fever so thoroughly as to attain the desired ends requires much attention and close watchfulness on the part of those in charge of the case; and although in many cases it may seem afterwards as if the resort to such measures had been unnecessary, so far as the recovery of the patient is concerned, the gain derived from increase in comfort, and deliverance from the dangers, direct or remote, of continued pyrexia, is surely worth all the labour and care that may have been expended.

ON THE COLD BATH TREATMENT OF ENTERIC FEVER.[1]

BY J. S. BRISTOWE, M.D., F.R.C.P.,
PHYSICIAN TO ST. THOMAS'S HOSPITAL.

MY first duty is to apologise to the meeting for venturing to read a paper to-night. I do not apologise to the secretaries, though I thank them; for they did me the honour of asking me some two months back to take part in the present discussion, and after mature consideration I determined in response to their invitation, although I had little special knowledge on the subject, to place that little at your service; but to my surprise I received from them a week or ten days ago an intimation that my paper was second on the list for this evening, and I have since seen an announcement to the same effect in the medical journals. Well, gentlemen, I confess I was taken aback, for there is a wide difference between reading a paper which should contain the results of tabulated experience and mature thought, and simply rising to make any casual remarks that may strike one for the purpose of promoting discussion and evolving truth from the conflict of opinion; there is a wide difference in appearing before you as the author of a something on which discussion is to be based, and appearing among you simply as a critic; and undoubtedly, if I had foreseen what was in store for me, I should have respectfully declined the proffered honour. I trust that under these circumstances I shall be forgiven if my remarks appear crude and insufficient when compared with the more elaborate addresses which I feel sure you will hear from the gentleman who precedes and the gentleman who follows me. Indeed, I should like at once to acknowledge that my original intention in coming here this evening was to learn from those who know better than myself, and I doubt not that in this respect I shall not be disappointed.

There is nothing more difficult than to determine of medical treatment whether it does good or whether it does none. And of all methods of arriving at a conclusion on this point, the statistical is the most unsatisfactory and the most misleading. I suppose few, if any, doubt the efficacy of iodide of potassium and mercury in syphilis, of quinine in ague, of iron in chlorosis, and of salicylic acid in acute rheumatism. But the universal trust in these remedies does not depend on the flourishing of yards of statistical details before our eyes, but on the daily evidence presented to us of the cutting short or cure of these maladies as soon as ever specific treatment is employed. In most cases we base our judgment of the efficacy of particular plans of treatment on the belief that the diseases for which they are employed are rendered somewhat less severe than they otherwise would be, or that their duration is shortened by a few hours. No treatment of disease was, in its time, believed to be more successful than that of pneumonia by antimony and calomel. At a later period alcohol in overwhelming doses was regarded by many distinguished physicians as a panacea for all kinds of inflammatory and febrile diseases. Alkalies are still believed in by many as the best of all cures for acute rheumatism. The efficacy of all the above remedies in the cure of the diseases with which I have associated them has been proved over and over again by elaborate statistics; the explanation of their efficacy has been made apparent both by chemists and by physiologists; numberless practitioners in all walks of the profession and all over the world

[1] Read at the Medical Society of London, Feb. 18th, 1884.

have attested their value. Does anyone seriously believe in them now? And yet if they possessed one tithe of the virtue which has been ascribed to them their value ought to be wholly beyond dispute, and their neglect at the present day is little less than a scandal. What must be said about the cold bath treatment of enteric fever? Is this a remedy of unmistakable value? Does it relieve? does it injure? Does it cure? does it kill? Or does its use, like that of many other remedies, simply prove that within certain limits many illnesses take their course uninfluenced by the skill or want of skill brought to bear upon them?

We must admit that strong *a priori* arguments may be adduced in favour of the cold bath treatment. An abnormally high temperature is in itself injurious, and may be fatal. Excessive heat is at once a consequence of undue disintegration of body tissue, and a cause of further disintegration. And as a result of such disintegration effete matters accumulate in the blood and poison the system; and presumably therefore, if we can by the application of cold diminish these injurious conditions, the patient must to that extent be benefited. Indeed, there can be no doubt patients do seem, at any rate temporarily, benefited by immersion in cold water. But then it will be recollected that there were good *a priori* grounds for believing that the injection of saline fluid into the veins of cholera patients would prove curative, that such injections have in most cases been followed by temporary amendment, and that many patients have recovered after its use; yet the practice has not in the long run commended itself to the profession.

On the other hand, there are surely theoretical reasons for fearing the cold bath treatment might prove injurious. With all due respect for the omnipotent bacteria, I presume that there are good grounds for believing that inflammations and congestions of internal organs are largely due to exposure of the surface to cold and wet; that bronchitis, pneumonia, and pleurisy, inflammation of the peritoneum and bowels, nephritis, and many other like affections, are generally caused by such conditions. Does it not seem probable that such internal congestions and inflammations in typhoid fever might be excited or aggravated by cold bathing? Again, have we any actual proof that the specific processes of the disease are kept in abeyance or arrested by lowering the patient's temperature? are the living organisms which are presumably its cause rendered less venomous or less prolific, or killed thereby? do the intestinal lesions subside or heal more rapidly than they would otherwise do? is death from intestinal hæmorrhage or perforation reduced in frequency? is the rash modified in any degree?

Well, gentlemen, I have no doubt that statistical evidence may be adduced giving a satisfactory explanation or response to all my questions. But, as I have already stated, I have very little faith in the application of statistics to such questions, and before I could accept them should need to weigh the value of all the facts on which they were based, and even then should probably not be influenced by them, unless they were of overwhelming weight in themselves and supported or confirmed by other considerations. Dr. Cayley will recollect that a few years ago, on the occasion of a discussion in which the cold bath treatment of enteric fever was involved, he adduced the then recently published results of the treatment of the disease by some German physician, which showed statistically that by means of it in his own hands the mortality of enteric fever had been reduced to 2 or 3 per cent. I think Dr. Cayley did not attach much importance to those statistics. Nor did I.

My personal experience in the treatment of enteric fever by the cold bath is not extensive, and for some years past I have rarely, if ever, had recourse to it. I have undoubtedly seen patients apparently benefited by it, undoubtedly benefited at the time, and making later a good recovery. But I have never felt perfectly satisfied in those cases that I have carefully watched that the benefit to the patient was real, or that his recovery was determined or hastened by it. But I had two cases, occurring within a short time of one another, which impressed me strongly, and the results of which were the main cause of my giving up the habitual practice of the treatment. I have not had time to search for the notes of these cases, but I have no difficulty in recalling the main features of them. The first was that of a young man who had a very severe attack of enteric fever, who had had much diarrhœa, a little pulmonary complication, and in the second or third week was in the typhoid state, with a temperature reaching at least 105°. A few days before his death the cold bath treatment was adopted *secundum artem*, and at first with a little apparent benefit. Then he almost suddenly fell into collapse, with livid surface, rapid, shallow breathing, and distension of the abdomen. It was thought that he had perforation of the bowel. At the post-mortem examination all the usual lesions of enteric fever were present, with very extensive ulceration of the bowel, but there was no perforation, and no sign whatever of peritonitis. The lungs, however, were in a condition which I never recollected to have seen before in enteric fever. They were small, slate-coloured, and almost empty of air throughout. They were in a state of universal collapse, without any trace of actual pneumonic consolidation. I could not help regarding the condition of the lungs as a consequence of the repeated application of external cold. A few weeks after this I had another case of enteric fever of about the same standing, and equally ill, and the question arose of using cold baths; recollecting the other case I decided not to employ them. A few days later the patient died, and I was present at the autopsy. The bowels were much ulcerated, but there was no perforation and no peritonitis. The lungs were exactly like those in the former case, and I at once remarked, "Well now, if this patient had been treated as the other was, by cold baths, I should have attributed his death to them; as it is, my explanation of death in the other case needs correction." The resident assistant physician, however, who was present, then informed me that after my visit the cold bath treatment had been had recourse to. I have little doubt that my explanation of the condition of these patients' lungs was correct, and that the immediate cause of death in both cases was the lung affection. Of course I do not mean to say that they would have recovered even if the baths had not been given to them.

I have recently been speaking on this subject to a young Austrian physician who has been for several weeks past in London, and he tells me that at some large hospital in Austria—I am not sure whether it is at Vienna,—the use of cold baths, which were formerly largely in vogue, has been discontinued owing to the heavy mortality and to the frequent occurrence of intestinal hæmorrhage among the patients thus treated. I should be interested to know what is the experience of other practitioners in London as regards the occurrence of congestion and collapse of the lungs, and congestion and hæmorrhage of the bowels as a consequence of cold bathing.

When any plan of treating disease is introduced on high authority, it is usually largely adopted, and finds many enthusiastic advocates. There is one reason no doubt why the cold bath treatment should be an exception to the rule—namely, that it is difficult and expensive of application. Nevertheless I believe that it has been very largely adopted abroad, and even to no inconsiderable extent in our own country and in this metropolis. It was once much employed at St. Thomas's. Some of my colleagues were much more enamoured of it than myself, and some at any rate have written strongly in its favour, but for several years its use has only been exceptional. My impression is that it has been largely discontinued in most of the hospitals of London. The German gentleman whom I just now quoted assures me that its employment has almost died out in Austria, and some other parts of the Continent; and that even in Prussia it is scarcely in use, excepting by two or three enthusiasts who have identified themselves and their reputation with it.

If the view above expressed of the liability of the cold bath treatment to induce dangerous internal complications, and if its large discontinuance by those who formerly employed it be correct, they present strong arguments against its value as a curative agent. I acknowledge, however, my lamentable ignorance on the subject. What I have written I have written mainly to draw the advocates of the cold bath treatment. I have come to talk and learn, and not to teach; and if I have treated the subject flippantly, my excuse must be that I never anticipated writing a paper, that I have had no time to collect material to write one of any value, that, after all, I have taken up only a little of your time, and that though I have taken the opposition side of the question, I am ready in the most cowardly way at any moment to strike my colours, or to desert to the enemy.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC.—A meeting, at which the Lord Mayor will preside, will be held on the 21st inst., at the Mansion House, in aid of completing the new building of this hospital now in course of erection. Professor Marshall, Sir Andrew Clark, Sir Risdon Bennett, and others are expected to be present.

ON THE

RELATIONS OF THE AMOUNTS OF SUGAR AND UREA IN THE URINE IN SOME CASES OF DIABETES MELLITUS.

BY E. HARRISON, M.B. CANTAB., M.R.C.S.,
AND
C. SLATER, B.A.

(*Concluded from page 340.*)

To make our own results comparable with those of Dr. Ringer, it is necessary to subtract from the daily amount of sugar found by experiment the amount derived from the amyloid ingesta. This has been done in the following tables, which exhibit the ratios thus obtained:—

TABLE IV.—*Case 1.*

Sugar.	Urea.	Ratio.	
214·5	108·7	1 : 1·9	
332·5	112·8	1 : 2·9	
149·5	76·9	1 : 1·9	
240·5	95·1	1 : 2·5	
266·3	101·1	1 : 2·6	
293·5	99·2	1 : 3·0	
254·7	98·5	1 : 2·6	Average ratio, 1 : 2·2
142·8	76·9	1 : 2·0	
179·25	89·1	1 : 2·0	
306·2	108·8	1 : 2·8	
179·25	87·1	1 : 2·0	
185·6	107·2	1 : 1·7	
267·3	90·9	1 : 2·9	
258·3	85·37	1 : 3·0	

TABLE V.—*Case 2.*

Sugar.	Urea.	Ratio.	
231·4	72·1	1 : 3·2	
133·3	74·57	1 : 1·8	
64·5	55·45	1 : 1·2	
109·6	56·6	1 : 1·9	
180·3	88·4	1 : 2·0	
160·3	78·1	1 : 2·0	
180·4	81·3	1 : 2·2	Average ratio, 1 : 2·2
212·6	103·9	1 : 2·0	
280·9	102·8	1 : 2·7	
157·4	42·4	1 : 3·7	
225·4	94·1	1 : 2·4	
179·5	53·4	1 : 3·3	
165·6	70·8	1 : 2·3	
122·3	70·4	1 : 1·7	

TABLE VI.—*Case 3.*

Sugar.	Urea.	Ratio.	
448·4	110·0	1 : 4·0	
312·3	83·1	1 : 3·7	
194·9	78·3	1 : 2·5	
140·5	76·02	1 : 2·1	
196·0	77·4	1 : 2·5	
262·4	86·8	1 : 3·0	
196·0	75·09	1 : 2·6	Average ratio, 1 : 2·4
271·5	69·8	1 : 4·0	
169·7	58·7	1 : 2·9	
249·8	80·3	1 : 3·0	
75·8	55·8	1 : 1·4	
28·1	32·4	1 : 0·9	
21·3	45·9	1 : 0·5	
33·3	39·16	1 : 0·8	

It will be seen that the average ratios of the fourteen days in these three cases are practically alike, and very closely approximate to that derived by Dr. Ringer from his hourly observations. That we are justified in assuming, as above, that in the diabetic all the ingested sugar or starch is excreted as sugar, and that only the excess of sugar is derived from proteid metabolism, is most probable, both from physiological reasons and clinical facts. We know clinically that removal, as far as possible, of amylaceous food stuff at once diminishes largely the amount of sugar excreted, and that the addition of amyloid to a diabetic diet is immediately followed by an increased secretion of sugar equal to that ingested (Pavy), and that physiologically, of all foods, amyloids most increase the glycogen in the liver.

Though in Ringer's experiments the relation is constant when the mean of several hours is taken, yet there is a very wide variation in the ratios obtained each successive hour. This is shown in Diagram 1, where it will be seen that the line representing the ratios is very far from being a straight one, as it should be if the relation of sugar to urea were constant. Similarly in our own experiments, though the mean ratio of the fourteen days is apparently constant, yet the wide variations of the individual ratios, so great as from 1 : 1·2 to 1 : 4, require some explanation. Ringer explains the individual variations by supposing that the sugar and urea do not exactly correspond in time of elimination; but our results, being the means of the whole twenty-four hours should be, at least, less influenced by this cause for variation, and yet the discrepancies exist.

Diagram 2, constructed from the experimental data of Tables I., II., and III., seems to give some hints as to the explanation of the daily variations. The line β embodies the numbers given in the first columns of Tables IV., V., and VI., and represents the sugar which must have been derived from other sources than the ingested amyloids, and therefore presumably from proteid metabolism. This we will call the curve of "experimental proteid sugar." The lowest curves represent the daily urea passed. The dotted curves represent the ratios between the urea and the experimental proteid sugar given in Tables IV., V., and VI. This curve of ratios, it will be seen, follows with great accuracy the curves of the urea and sugar from the non-amylaceous sources, and is far from the straight line it should be were this ratio a constant one. Moreover, this departure from a constant ratio is, we think, too regular to be considered accidental. The ratio increases as the amounts eliminated increase. May not this mean that when there is an increase in the sugar excreted, this excess is not altogether due to a corresponding excess of proteid metabolised, but to a greater amount of perverted metabolism? In health the products of proteid metabolism are:—

Proteid = urea + non-nitrogenous products,

these latter being used either in the production of fat, or eliminated as CO_2.

In diabetes the non-nitrogenous products are partially employed in the formation of the excreted sugar, so that the diabetic formula would stand thus:—

Proteid = urea + sugar + non-nitrogenised products,

these latter being, of course, diminished in this case. There are, then, two possible ways by which the sugar may be increased—viz., (1) by the metabolism of more proteid, giving rise to an increase in all the factors, urea, sugar, and non-nitrogenous products, the ratios of these three remaining constant; and (2) the same amount of proteid being used, and therefore the same amount of urea eliminated, the perverted metabolism is increased, and more sugar is produced at the expense of the working material. In this case the ratio would increase with the amount of sugar eliminated. The curves given in Diagram 2 show, we think, that the process at work is a combination of methods 1 and 2. The difference between the curves β and δ, being the difference between the actual and theoretical sugar from proteid sources, represent, as far as the relative ratios are concerned, the third term of the equation—viz., the non-nitrogenous working material.

It will be seen, then, that all three terms of the equation—urea, sugar, and non-nitrogenous material—rise and fall together, but that where the amounts eliminated are large, the sugar gains upon the urea and encroaches upon the working material, as is shown by the approximation of the two curves of actual and theoretical sugar as they rise.

The case of S——, represented on Diagram 2, Case 1, is, it will be observed, much the simplest of the three, which may be accounted for by the fact that the disease was in an earlier stage, and that the man was improving and gaining weight. It will be seen that the sugar actually eliminated is always considerably lower than the amount theoretically possible, thus allowing a margin of healthy proteid metabolism for working purposes. The ratio of sugar to urea, also, never reaches a maximum. This, which is the simplest, is also the case on which we can place the most reliance, as the patient was much more trustworthy than the other two, and could be depended on not to transgress in his diet. The apparent discrepancies which occur in the other two cases are, however, not only explicable, but of considerable clinical interest.

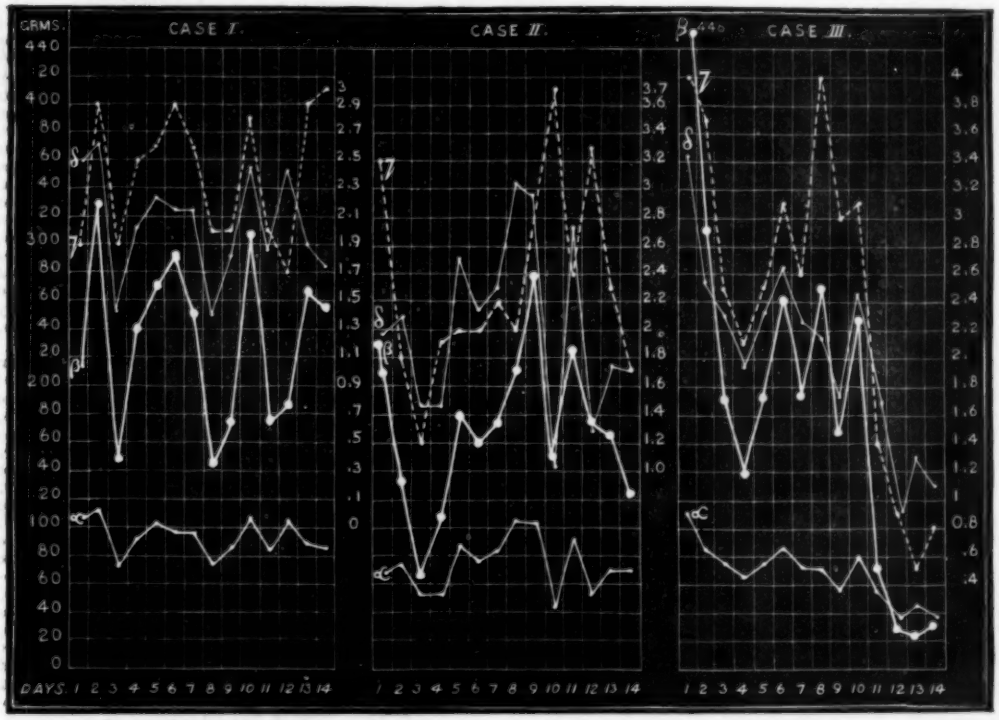
In Case 2 for the first nine days the curves have a similar relation to those of the previous case, but on the tenth day the theoretical amount of proteid sugar is less than the experimental, and the ratio of sugar to urea rises to 3·7, which is above what is theoretically possible. This was almost certainly due to his having obtained some starchy food in addition to his prescribed diet. On the twelfth day the ratio reaches the maximum of 3·3.

In Case 3 the curve of experimental proteid sugar is for the

first two days above the theoretical proteid sugar curve. This is doubtless due to the fact that previously and on the first day the patient was on ordinary diet, and there was consequently a quantity of sugar in the system, derived from purely amylaceous sources, still to be excreted. The amount of sugar contained in this diet could not be estimated with great accuracy. The only portion of this curve really trustworthy is from the third to the seventh day, when on diabetic diet, and the relation between the curves is the same as in the first two cases. Subsequent to this he grew worse, and In B——'s case the urea eliminated fell to but little above the normal, though there was still a considerable amount of sugar eliminated. As has been noticed previously, the sugar was much reduced previous to death.

To briefly recapitulate, we see in the three cases :—1. That the amount of sugar derived from proteid metabolism is less than that which is theoretically possible, supposing all the proteid to be converted into urea and sugar, thus leaving a margin for ordinary healthy working purposes. 2. That the ratio of sugar to urea from non-amylaceous sources, while

DIAGRAM 2.



Curve α—Experimental urea.
Curve β—Curve of experimental proteid sugar.
Curve γ—Curve of the ratios of sugar and urea. It is on a different scale to the other curves, the figures to the right giving its value. In each case its position is changed to avoid confusion.
Curve δ—Curve of maximum amounts of sugar theoretically derivable from the proteid metabolised. It is formed by multiplying the daily amounts of urea by the ratio 3·3.

the amount eaten varied much. The toasted brown bread which was substituted for the gluten varied much in the completeness of its toasting, and was not unfrequently not toasted at all.

In Diagram 2, Case 3 and the latter part of Case 2 are interesting in connexion with the ultimate results of the cases. Both patients died shortly after the observations, and we would venture to suggest that this may be due to the fact that the healthy portion of the proteid metabolism is reduced to such an extent, as indicated by the approximation of the two curves, as to be incompatible with nutritive requirements. approximating to a constant value of about 2·2 : 1, yet varies within certain limits, increasing with the amount of sugar excreted, and we have indicated above a theoretical explanation of this. 3. When the sugar is large in amount there is therefore less margin for ordinary proteid metabolism, which argues a bad prognosis.

That three cases afford very insufficient grounds from which to draw clinical conclusions we are well aware, and would wish the above inferences drawn from them to be regarded in the light of suggestions, to be confirmed or disproved by subsequent observations, which we hope to undertake.

CALCULUS OF THE BLADDER IN A FEMALE CHILD THREE YEARS AND A HALF OLD; LITHOTRITY; RECOVERY.[1]

BY JOHN R. LUNN, F.R.C.S. EDIN., &c.,
MEDICAL SUPERINTENDENT TO THE ST. MARYLEBONE INFIRMARY.

J. B——, aged three years and a half, was admitted into the St. Marylebone Infirmary on August 12th, 1881. The child was brought by a friend, who stated that it had been in a London hospital for three weeks for prolapse of the rectum. On admission the child was found to be well nourished but in a very dirty state. Slight incontinence of urine and frequent micturition were observed, but there was neither rectal prolapse nor hæmaturia. Urine normal. She passed a round worm (ascaris lumbricoides) in Oct. 1881, having previously had some symptoms and treatment for the same. The child's general health continued to improve, and she was able to get about the ward. In Jan. 1882, she had fresh symptoms of worms with prolapse of rectum. Treatment was again successful, and she passed another round worm. Her health did not improve as before; she began to scream at night, complained of pain in stomach,

[1] Read at the West London Medico-Chirurgical Society.

and the incontinence of urine became worse. The urine was again examined and found normal. In February she was sounded by me under chloroform, and a large hard stone was found, about one inch square, roughly measuring it with a lithotrite. Between the end of February and the beginning of March her symptoms became much worse, the urine contained streaks of blood, the appetite gradually failed, and screaming at night-time began, and she passed water more constantly. The urine was acid and contained a trace of albumen.

On April 2nd, the patient having been put under chloroform by my colleague, Dr. Benham, the stone was detected by the sound. It could also be easily discovered by combined rectal and supra-pubic examination. The hips were raised on a pillow and the urethra dilated with ordinary dressing forceps. A small lithotrite was then introduced into the bladder, and the stone crushed several times and the fragments removed with Bellingham's wash-bottle. After the child had been under chloroform for three-quarters of an hour she was put back to bed and kept warm. The temperature was 99° F. on the same night and on the four following days after the operation. Pieces of the crushed calculus were constantly passed. On the fifth day after the operation the urine became a little ropy. Hot baths, warm water injections, and chloral were ordered. The urine never became alkaline, and only had a trace of albumen. She was kept on her back and made to pass her urine whilst lying down, and on the tenth day appeared well and happy. On the fourteenth day the temperature went up to 102° F., and the urine again became ropy. The same treatment was resorted to. On the seventeenth day the fragments were crushed for the second time, as it was thought they were causing irritation of the bladder. The same process was adopted as before, but the urethra was not dilated. Four days later another rise of temperature, 102·4° F., occurred, but after a dose of castor oil became again normal. On April 23rd crushing was performed for the third time. The fragments could be felt previously between the rectum and abdomen like a bag of small stones. Most of the remaining fragments were removed and the same precautions after the operation were taken as before. Four days later a slight rise of temperature, 99·2° F., was noted, but it went down after the warm baths. On May 3rd, one month after the first crushing, the urine was acid and contained only a trace of albumen. There was neither prolapse of rectum nor pain. The urine was passed voluntarily on May 16th, for the first time, and the sound did not detect anything abnormal in the bladder. The child went out on June 10th, 1882, with no incontinence of urine, perfectly well, and cured.

Remarks.—The above case is interesting on account, first, of the age of the child; secondly, owing to the size of the calculus; and, thirdly, the sex of the patient. The danger to be avoided during the crushing was damage to the mucous membrane of the bladder. The smallest lithotrite procurable was employed. Clover's wash-bottle was found more handy and more manageable than Bellingham's. It is also interesting to note that the urine never became alkaline. The child I may say never had a dangerous symptom during the three operations.

I am indebted to Dr. Thudichum for the analysis of the calculus, which consisted of phosphate of calcium, phosphate of ammonium and magnesium, and urate of ammonium.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nullaautem estalia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

LONDON HOSPITAL.

APHASIA AND APHEMIA.

(Under the care of Dr. LANGDON DOWN.)

THE following notes, for which we are indebted to Mr. Alfred T. Schofield, M.R.C.S., &c., house-physician, illustrate the difference between the above closely allied affections:—

Aphasia.—A woman, aged fifty-two, on Nov. 20th, being previously in good health, was found at 8 A.M. sitting on the side of her bed, unable to speak or to move her right arm or leg. For five days she did not seem to understand anything, though there was apparently no actual loss of consciousness. The patient was admitted on Dec. 12th, when her condition was as follows: She is intelligent, and seems much distressed at her present condition. She has complete motor paralysis in the right arm and leg; the sensation in them is increased. There is no facial paralysis. Patient can open her mouth, but cannot protrude her tongue when told, though she makes great efforts to do so. She cannot say "yes" or "no" in answer to any question, nor does she even shake or nod her head. She is, however, constantly saying either "Oh, dear me!" an expression she habitually used at home, or "pretty Kitty!" (an expression never heard at home), though she does not say either one or the other when told to do so. Her articulation and vocalisation, though confined to these four words, are perfect. The patient will not make the least attempt at writing (with her left hand), nor does she ever read. If several numbers are written down she can point to the one representing her age (52). There is no history of syphilis. The heart, arteries, and lungs appear normal. She has control over the sphincters. She has some small varicose veins in the leg. A fortnight after admission the patient said on one occasion to her nurse, "Make it," referring to the bed, and now occasionally shakes her head in negation. Her condition is otherwise unchanged, though she makes great efforts to speak. In this case there is no loss of articulation (aphemia), no loss of voice (aphonia), no mere loss of memory (amnesia), but there is complete loss of intelligent speech, spoken or written (aphasia).

Aphemia.—The patient is a man aged twenty-two. On Dec. 12th, at 8.30 A.M., he was suddenly seized with loss of speech, and admitted to the hospital on the same day. He did not lose consciousness. He has right facial paralysis, principally of the lower half of the face. He can protrude the tongue readily, which is deflected to the paralysed side. He has slight paresis of the right forearm and leg. In answer to every question, he can only give a sort of husky grunt. He cannot utter a single word. He had been hoarse for a fortnight before the attack, but the voice is now much improved by the application of the interrupted current to the vocal cords. The patient is very intelligent, and nods or shakes his head, or writes his answers correctly by pantomime on his hand with one finger or with paper and pencil. No specific history can be obtained. The heart and arteries are normal. In this case the patient was at first aphemic, but has now recovered his voice. He is not aphasic, for though he cannot articulate he can speak intelligently (if one may use the expression) in writing. He has, however, totally lost the power of articulation, though there is no paralysis of these muscles, and no difficulty of deglutition, and is therefore aphemic. After three weeks his condition remains unchanged.

MANCHESTER ROYAL INFIRMARY.

CASE OF DISLOCATED SHOULDER AND SIMULATED RUPTURE OF AXILLARY VEIN.

(Under the care of Mr. HARDIE.)

FOR the report of the following case we are indebted to Mr. W. Thorburn, M.R.C.S., house-surgeon.

F. S——, a woman, seventy-two years of age, was admitted to the accident room of the Manchester Royal Infirmary on the evening of Dec. 29th, 1883, complaining of injury due to a fall on her left shoulder. The shoulder presented the usual signs of subcoracoid dislocation, but there was in the mid-axillary line, about opposite to the fourth rib, a soft ill-defined tumour about the size of a small orange; the veins over the shoulder were much distended. An attempt was made to reduce the dislocation by the thumb in the axilla, but on trying to do so the tumour very rapidly increased in size, and in the course of a few minutes was as large as a football and very tense. The veins were much distended, the radial pulse but slightly weaker than that of the opposite side. The diagnosis arrived at was probable rupture of the axillary vein, and as the only practicable treatment appeared to be amputation at the shoulder, Mr. Hardie was sent for. Pending his arrival, the arm was enveloped in a wet bandage and the tumour and chest enclosed in an Esmarch's bandage. About an hour and a half later, when this was removed, the tumour appeared

much less tense but more diffused. It rapidly became tense again. Amputation was resolved upon, but consent could not be obtained, and the bandages were reapplied and the patient returned to bed.

On the following morning the tumour appeared again less tense and did not swell up on removing the bandage. The dislocation was easily reduced without chloroform, there being no further swelling. There were marks of ecchymosis in the axilla. The arm was fixed to the side and an ice-bag applied to the side and back. On Dec. 31st there was distinct swelling and discolouration down the back from the neck to the sacrum, but no signs of inflammation. Ice-bags were continued until Jan. 5th, 1884. The swelling gradually subsided, the discolouration disappearing with it. There was never any inflammation or sloughing. The temperature was normal throughout. On Jan. 19th the patient was sent home with merely some stiffness in the shoulder-joint.

The enormous rapidity of the swelling in this case, with great dilatation of the superficial veins, led to an error in diagnosis, which, but for a fortunate accident, would have led to a mistake in treatment serious at least, and, if primary amputation at the shoulder had been resolved on, probably fatal. Doubtless, the real condition was rupture of some large, probably arterial, branch in the axilla, causing the rapidly growing tumour and, by pressure on the vein, the dilatation of its branches.

ROYAL UNITED HOSPITAL, BATH.

FOUR SUCCESSFUL CASES OF LATERAL LITHOTOMY.

(Under the care of Mr. H. W. FREEMAN.)

CASE 1.—H. B——, aged ten years, a well-nourished boy, was brought to the hospital because he wetted his bed at night. For a few weeks previous to admission he had suffered during school hours from a frequent desire to micturate, but had no pain in the bladder on lying down first at night. The parents complained of his urine smelling strong, and on admission it was found to be alkaline and ammoniacal, but contained no blood. The bladder was sounded and a large rough stone found at once. After resting for a period lateral lithotomy was performed by Mr. Freeman, and a calculus weighing 225 grains extracted. It was coated externally with phosphates, arranged like stalactites, with a hard nucleus of oxalates, a very fine specimen of the ordinary mulberry calculus. There was but little bleeding from the wound; the bladder was washed out with a 2 per cent. solution of carbolic acid. An elastic tube was introduced through the wound into the bladder with a plug of carbolised sponge, and withdrawn after twelve hours. Urine passed through the urethra on the third day after operation. The temperature never rose over 99° F., and the boy did well throughout. The wound completely closed on the nineteenth day, and he left the hospital cured on the twenty-fourth day. Beyond castor oil for the bowels, and an opiate at night for three days after the operation, no medicines were given.

CASE 2.—H. B——, aged thirteen, a cadaverous-looking, emaciated, half-starved boy, was admitted into the hospital complaining of pain in passing his water, and difficulty in retaining it. He stated that he had been bad with his water for some years. There was no pain at the tip of the penis or down the thighs. He had a long prepuce, and was seen pulling vigorously at it, and consequently wetted his bed at night. On admission, the urine was phosphatic and ammoniacal, but not albuminous. The abdomen was swollen, hard, and tender, with evident mesenteric mischief. The bladder was sounded, and with some difficulty a small stone was struck. Phosphatic deposits, which grated on contact with the sound, were made out on the lining of the bladder. The boy was well fed, the bladder washed out daily with a grain to the ounce solution of boracic acid, and he was kept in the hospital for three months, with the hope of improving his general condition. A reticence was felt in operating upon so unfavourable a subject, but, waiting for the earliest favourable moment, lateral lithotomy was performed by Mr. Freeman, and a small phosphatic calculus, weighing only thirty-eight grains, was extracted. There was no bleeding of any moment, but the wound was plugged with carbolic sponge, and a tube introduced into the bladder in the usual way, and retained for twelve hours only. He passed urine through the urethra on the tenth day after the operation. The abdominal enlargement gave some trouble, was tender and large, and although the perineal wound looked well, a persistent rise of temperature was noted in the evenings only at the end of the second week after the operation, varying from 101° to 103°. He ate ravenously. After a week of this evening temperature continuing, he was given three grains of quinine every four hours, and the perineal wound, which had become offensive, was syringed well with a grain to the ounce solution of quinine. This mode of treatment was kept up for a fortnight, when the temperature had become normal, but the wound was healing sluggishly. It closed, however, at the end of the seventh week after the operation. The boy then picked up flesh rapidly, his abdominal tenderness diminished, and he was sent to the seaside nine weeks after operating. He has done well since that time.

CASE 3. — G. M——, aged ten, a pale, anæmic, ill-nourished boy came into the hospital complaining of frequent and painful micturition. He wetted his bed at night, and was seen pulling at his prepuce frequently. His urine was found to be free of albumen, was alkaline and phosphatic, and he voided four pints of limpid fluid in twenty-four hours. He was put on iron and a milk diet for a couple of weeks, and having improved in appearance, lateral lithotomy was performed by Mr. Freeman, and a lithic acid calculus, coated externally with phosphates, extracted; it weighed 82 grains. There was no bleeding; the usual tube and plug were applied for twelve hours after washing out the bladder, and then withdrawn. He did well for ten days, with a temperature of 99° F. in the evening; but on the eleventh day after operating his evening temperature rose to 102·4°. He voided some round worms after taking castor-oil, and felt relieved, but this persistent evening temperature continued, and he was given by the mouth one grain and a half of quinine every four hours, and a local syringing to the perineal wound of a solution of quinine (one grain to the ounce), and within six days the temperature was again normal. The wound, although looking well, during the time had passing through it ammoniacal urine; this became acid on the cessation of the high temperature. He passed urine per urethram on the tenth day, got up on the twentieth with the wound closed, and was discharged cured on the thirty-first day after the operation. The boy looked better and weighed heavier, his parents said, than he had ever done before.

CASE 4.—John P——, aged six, a rosy-looking, healthy, country boy, was sent in by Mr. Charles Pitt of Malmesbury. The patient had sufferred for some months with slight pain in micturating. The urine was found to be alkaline and contained muco-pus. Mr. Pitt had previously diagnosed the stone, and he was operated upon immediately on admission into the hospital. Lateral lithotomy was performed by Mr. Freeman, and a large spherical lithic acid calculus extracted weighing 185 grains. The bladder was washed out and the usual tube and sponge plug introduced and withdrawn in twelve hours. He passed urine by the urethra on the night of the operation, and continued to do so in large quantities. The wound always looked healthy, but on the fourteenth day after operating the evening temperature rose to 101·4°. Quinine was ordered at once in one and a half grain doses every four hours, and continued for a week by the mouth, when evening heat was found again normal. He got up on the twentieth day. The wound closed completely on the twenty-fourth day, and he was discharged well on the thirty-first day after the operation. The urine was acid and normal.

Remarks by Mr. H. W. FREEMAN.—Little need be said about these four lithotomies. They did well, as most of these kind of cases do in the young; but it is interesting to remark in three of these cases that on the tenth or twelfth day after operation a slight rise of temperature, averaging about three degrees, took place in the evening, continuing for a week or more, and yielding to the internal and local administration of quinine. It has been shown by my valued friend, Mr. T. W. Nunn, how useful quinine injected into the bladder to the amount of two grains and a half to three ounces of water has proved in his hands in chronic cystitis with ammoniacal urine, and Dr. Ray Lankester, in the recent Biological Section of the British Association, showed how plentifully bacteria are found in muco-purulent discharges from the bladder, and how they disappear by the frequent use of weak solutions of quinine injected into that organ. I presume, therefore, some such explanation must be assigned to these cases. As soon as quinine was used, internally and locally, the evening rise of temperature gave

way in a few days, and the urine previously ammoniacal became less so, and ultimately normal and acid. It would seem as if bacteria were absorbed by the granulating surface of the perineal wound, seeing the bladder is, for the most part, a non-absorbent organ, and gave rise to the evening exacerbation of heat. In Case 4 the boy was purposely cut a little more forward in the urethra than usual in order to ascertain the earliest continued urethral micturition, and its effect in point of time in the healing of the wound. He voided urine per urethram a short time after he was put to bed, and continued daily to do so, but this proceeding uninfluenced the result in any way.

Medical Societies.

ROYAL MEDICAL & CHIRURGICAL SOCIETY.

Neurectomy of the Second Division of the Fifth Nerve.—Amputation of the Arm and Scapula for Ossifying Sarcoma.

THE ordinary meeting of this Society was held on Tuesday last, Mr. Richard Barwell, Vice-President, in the chair; the paper by Mr. Chavasse occupied by far the greater part of the time of the proceedings. We regretted to hear of the absence of the President from indisposition, but it is hoped that Mr. Marshall will be able to deliver his address at the annual meeting, to be held on Saturday, March 1st, when the election of office-bearers for the ensuing year will take place.

The SECRETARY read the report of the committee on the preparations forwarded by Dr. Straus:—"We have examined the microscopical preparations exhibited to the Society on February 12th, 1884, and have found in them the micro-organisms described by Dr. Straus, but do not observe any features of the bacilli in the tissues that can be considered as specific." Signed by E. Klein, M.D., F.R.S.; Heneage Gibbes, M.D.; Victor Horsley, B.S., F.R.C.S.

Mr. THOMAS F. CHAVASSE read a paper on Neurectomy of the Second Division of the Fifth Nerve. Case 1 was a man, aged fifty, who had suffered from intractable neuralgic pains extending over a period of fourteen years. Talking and movements of the jaws gave rise to painful paroxysms, which were exaggerated in cold wet weather. The pain always commenced in the situation of the right upper molar teeth, thence it passed upwards to the cheek, to the temporal fossa and parts around the orbit, and produced a profuse flow of tears. He had endeavoured at intervals to follow his occupation as a labourer, but for six months before admission to the General Hospital, Birmingham, had been quite incapacitated. Carnochan's operation, modified as to the skin incisions, was performed on October 3rd, 1882, and by removing portions of the anterior and posterior walls of the antrum by trephines, the infra-orbital nerve was traced back into the spheno-maxillary fossa, and removed just anterior to the foramen rotundum, together with Meckel's ganglion. No constitutional symptoms followed the operation, and by Oct. 16th the wound was healed. The patient has continued to be free from pain ever since, and has resumed his old occupation. Case 2 was a man, aged forty-seven, who had suffered from intractable neuralgia for eleven years. Pain was excited by speaking, masticating, and walking. It always commenced in the situation of the upper molar teeth of the left side, and latterly was so severe that relief could only be obtained by lying quietly in bed. On Feb. 9th, 1883, a similar operation as in the previous case was performed. The cavity of the antrum was very deep, and the hæmorrhage profuse, so that although the posterior dental nerves were seen and divided, Meckel's ganglion was not removed with the nerve. The wound healed in a fortnight, and the patient was able to take solid food. The immediate relief from pain was not so complete as in the case in which the ganglion was taken away; but the patient was now in full health. The opinions of Carnochan and Billroth were quoted as being favourable to the removal of the ganglion when possible. In both cases the writer thought that the more radical operation of neurectomy held out better hopes of obtaining relief than either neurotomy or nerve stretching. Statistics showed that after this operation relief was generally obtained for longer or shorter periods, and no fatal result had been recorded. Attention was directed to the methods of operating introduced by Prof. Lücke of Strasburg, and by Prof. Lösen. Cases were quoted in which Braun had successfully operated by the plan of the latter, and an instance was given in which Reyher of St. Petersburg had tied the common artery before proceeding to the other steps of the operation. Mr. Chavasse handed round a table of all the published cases of neurectomy bearing on his paper which he had been able to collect. They are as follows:—

1. Operator, Carnochan. Man, aged sixty-nine; duration of disease, five years; date of operation, Oct. 15th, 1856; no return of pain in fourteen months; superior maxillary nerve trunk found to be vascular, engorged, and thickened, pain commenced in infra-orbital nerve (*Amer. Jour. of Sciences*, Jan. 1858).

2. Operator, Carnochan. Man, aged fifty-four; duration of disease, twenty-nine years; date of operation, Oct. 10th 1857; no return in seven weeks; for last nine years pain had been continuous, commenced in infra-orbital nerve; this had been divided by Chelius and other surgeons (Ibid.)

3. Operator, Carnochan. Woman, aged fifty-five; duration of disease, six years; date of operation, Nov. 5th, 1857; no return in one month; pain commenced in infra-orbital nerve (Ibid.)

4. Operator, Wood, J. R. Man, aged forty-two; duration of disease, several years; date of operation, April 2nd, 1866; no return in two years; patient was lost sight of (*New York Med. Jour.*, June, 1879).

5. Operator, Wood, J. R. Woman; age and duration of disease not stated; date of operation, Sept. 29th, 1869; duration of relief, nine months; pain returned in inferior dental nerve, a portion of this removed, and after many months no return of pain (Ibid.)

6. Operator, Wood, J. R. Man; age not stated; duration of disease, five years; date of operation, June 29th, 1870; duration of relief, nine months; pain returned in inferior dental nerve, a portion of this removed, with relief; in 1875 the patient returned, addicted to opium, stating pain had reappeared; died in 1875; post-mortem showed foramen rotundum closed by bone, no central changes in nerve origin (Ibid.)

7. Operator, Wood, J. R. Man, aged fifty; duration of disease, ten years; date of operation, Oct. 26th, 1873; duration of relief, three years; patient was lost sight of (Ibid.)

8. Operator, Blackman. Woman, aged thirty-five; duration of disease, fourteen years; date of operation, Jan. 24th, 1868; duration of relief, twenty months; portion of infra-orbital nerve and the whole of the inferior dental had been removed previously; after return the paroxysms were as severe as ever (*Amer. Jour. of Sciences*, July, 1869, and October, 1870).

9. Operator, Mussey. Man, aged thirty-two; duration of disease, five years; date of operation, June 11th, 1869; duration of relief, two months; pain returned in inferior dental nerve, part of which was removed, but in four months agony as great as ever (Ibid., Oct. 1869–70).

10. Operator, Carson (Middleton). Sex, age, duration of disease, and date of operation not stated; duration of relief, one year (Blackman, Ibid., 1870).

11. Operator, Schuppert (New Orleans). Man; age, duration of disease, and date of operation not stated; pain returned, in period not stated; finally the carotid artery was ligatured and the facial nerve resected at styloid foramen; after one year no return of pain (Conner, Ibid.)

12. Operator, Schuppert. Man; age, duration of disease, and date of operation not stated; no return after several years (Ibid.)

13. Operator, Foote (Cincinnati). Sex, age, duration of disease, and date of operation not stated; pain returned in three months, moderately severe (Ibid.)

14. Operator, Fowler, S. R. Man, age not stated; duration of disease, eighteen months; date of operation not stated; complete success as regards infra-orbital neuralgia; reported that some pain is at times felt along the line of lower jaw and teeth (Proceedings of Med. Soc., King's County, 1877).

15. Operator, Cheever, D W. Woman; age, duration of disease, and date of operation not stated; duration of relief, two years; pain returned as badly as ever in the cheek, temple, and lower jaw; infra-orbital region free (Boston City Hospital Reports, 2nd series, 1877).

16. Operator, Thorndike. Man; age, duration of disease, and date of operation not stated; duration of relief, one month; pain limited to infra-orbital region (Ibid.)

17. Operator, Wagner, A. Woman, aged thirty-five; duration of disease, fourteen months; date of operation not stated; no return in twenty months (Langenbeck's Archives, vol. xi.).

18. Operator, Wagner, A. Woman, aged forty-five; duration of disease, twenty-three months; date of operation not stated; pain returned in three months; neurectomy of infra-orbital previously performed; central cause suspected (Schmidt's Jahrbucher, Band 146).

19. Operator, Weir, R. F. Man; duration of disease not stated; date of operation, 1881; remains free; Wagner's operation had been previously performed (*New York Med. Jour.*, Jan. 12th, 1884).

20. Operator, Markoe. Man; duration of disease, date of operation, and duration of relief not stated; neurectomy of inferior dental previously; in three years supra-orbital neuralgia appeared (Ibid.)

21. Operator, Howe. Sex and age not stated; duration of disease, seventeen years; date of operation, 1883; remains comparatively free (Ibid.)

22. Operator, Gerster. Man, aged thirty-six; duration of disease, eighteen years; date of operation, June 16th, 1883; remains comparatively free; osteoplastic resection of upper jaw, and 1½ in. of superior maxillary nerve removed two years before (Ibid.)

23. Operator, Chavasse. Man, aged fifty; duration of disease, fourteen years; date of operation, Oct 3rd, 1882; remains free.

24. Operator, Chavasse. Man, aged forty-six; duration of disease, eleven years; date of operation, Feb. 9th, 1883; remains free.

Mr. WALSHAM had performed the operation of removal of Meckel's ganglion during the previous week. The case was that of a man who had been under the care of Dr. Buzzard and Mr. Adams, and had suffered for fourteen years from intense attacks of epileptiform neuralgia of the trigeminal nerve. Mr. Adams had stretched the infraorbital nerve, and this had been also practised by the speaker. However, the seat of neuralgia really appeared to be in the posterior dental branches, and accordingly the operation of Mr. Chavasse had been performed. Mr. Walsham, however, removed the lower border of the infra-orbital canal in order to be ready for any hæmorrhage. He also employed a special pair of forceps, which greatly facilitated the removal of the ganglion. It was important in taking away the posterior wall of the antrum not to remove the periosteum, for by this reservation the liability to hæmorrhage was greatly reduced. He also stretched the superior maxillary nerve in removing the ganglion, so that a further influence might be brought to bear on the Gasserian ganglion and the trunk of the nerve beyond, if possible. The value of reflected light from the laryngoscopic mirror was very great. The result was so far completely successful. He had stretched the supra-orbital, auriculo-temporal, inferior dental, and infra-orbital, during the last five years—one or other nerves in four cases.—Mr. BOWLBY had examined the posterior part of the infra-orbital nerve of this case, and had found much thickening due to an increase of the connective tissue; the nerve bundles were constricted, and the nerve tubules had undergone degeneration. He could not say whether an inflammation had spread along the posterior dental nerve, or whether the sclerosis were due to operations which had been performed at different times.—Mr. HENRY MORRIS thought we ought not to be in too great a hurry in pronouncing a patient as cured by the operative procedure. In a considerable number of cases of this sort, far too short an interval after the operation had been allowed to elapse to be sure of the result. Statistics of cases of traumatic tetanus and epileptiform neuralgia, in which some operation had been performed, were quoted as bearing out these considerations. Trousseau had pointed out how liable cases of epileptiform neuralgia were to remain well even for many months or perhaps years, and yet finally to relapse and become as bad as ever. Opium and morphia might relieve for a time and stop the course of the disease, but the neuralgia tended to recur. The case of a man, aged eighty-three, who had been under the speaker's care, was narrated in detail. Morphia and atropine subcutaneously injected, combined with the use of an ointment of veratria and the internal administration of arsenic, quinine, &c., had been employed with temporary relief. This man had been subject to attacks for forty years; they came on shortly after the removal of a tooth. There had been long intervals of relief, apparently of spontaneous nature. These intervals had been as long as two or three years; so we ought to be very careful in saying that operation was a certain means of relief in such cases. It was next suggested that many instances were really due to irritation of peripheral nerves; this principle was recognised in other surgical regions, but it was not the line of argument used in cases of trigeminal neuralgia. Mr. Morris had found beneath the mucous membrane of the alveolus of the upper jaw, far back, three or four little hard lumps, pressure on which at once produced a severe attack of epileptiform neuralgia in the case under his care. This patient had been treated by Mr. Lister and Mr. Pick. The infra-orbital nerve had been divided in front of the orbit, the nerve had also been isolated and stretched; it had further been cauterised with a red-hot needle, which Mr. Lister had introduced into the infra-orbital canal, but all to no purpose. Mr. Morris had then performed Langenbeck's operation of division of the infra-orbital nerve behind the orbit, the mucous membrane had been scored and divided, and the galvano-cautery had been used through the posterior dental foramen. None of these proceedings effected any permanent good; but the removal of the little hard bodies above mentioned gave the patient immense, and it may fairly be said lasting, relief; for although complaint had been made three years after the operation, yet it was understood that the neuralgia was really not severe. Drs. Coupland, Thin, and Goodhart had examined the bodies in question. They appeared to consist chiefly of adenoid structures, but contained osseous tissue with bands of fibrous tissue, and were not muciparous glands.—Mr. FREDERICK TREVES added four more cases to the list supplied by Mr. Chavasse, in which Meckel's ganglion had been removed. A permanent cure was extremely rare, and only a prospect of relief could be held out to such cases.—Dr. BUZZARD spoke of the case operated on by Mr. Walsham, and which had been under his care. The patient was a stonemason, aged fifty-six, who suffered from trigeminal neuralgia, affecting especially the infra-orbital and supra-orbital divisions. The pain usually began in the right gum of the upper jaw, and shot upwards and outwards to the malar bone. The pain seemed to go round and round outside the right eye, into the forehead, and through the eye. The greatest pain was felt over the supra-orbital notch. Dr. Buzzard considered that pain in the roof of the mouth was not so common in trigeminal neuralgia; this region was supplied by a branch coming directly from Meckel's ganglion. He thought we ought to allow of a great lapse of time before coming to a conclusion with regard to the effect of operative treatment. The patient in question had had several teeth removed without relief, and at one time the socket of the tooth was perforated into the antrum, and some pus escaped. So it was quite likely that an inflammatory condition of one of the dental nerves existed, and a secondary ascending change might ensue on this, and so explain the sclerosis found by Mr. Bowlby.—Mr. WALTER PYE had stretched the sciatic and facial nerves in different individuals for severe neuralgia, accompanied with convulsive movements of the muscles supplied by the nerves. At first it appeared that relief was complete and lasting, but time showed the fallacy of this belief, for eighteen months after the stretching of the sciatic the condition was as bad as ever.—Mr. CHAVASSE, in reply, thought the use of reflected light a matter of great moment. The operation of nerve-stretching might do much good. The point of leaving the periosteum behind the posterior wall of the antrum, as suggested by Mr. Walsham, was of much importance. In his cases nothing abnormal had been detected in the nerves on microscopical examination. Gerster had had a similar experience. The influence of peripheral irritation by local conditions, alluded to by Mr. Morris, was also commented upon, and Mr. Chavasse had relieved an old edentulous patient by attention to this point. He had not brought his cases forward primarily as specimens of cure.

Mr. CHRISTOPHER HEATH'S paper on a case of Amputation of the Arm and Scapula for Ossifying Sarcoma, with recovery, was next read. The patient, a lad of sixteen, was admitted into University College Hospital, July 2nd, 1883, with a large sarcomatous tumour of the upper arm and shoulder. Two years before he had noticed that the upper end of the right humerus was slightly larger than that on the other side. It had gradually increased in size, but much more rapidly during the last six months. In Jan. 1883, the patient was in St. George's Hospital, where Mr. Holmes proposed to amputate; but the patient declined, and went home to Cornwall. The shoulder was obscured by a roughly pyramidal swelling, the base being at the axillary border of the scapula, and the apex at the middle of the humerus. The posterior edge of the growth was rounded, and its outer surface was divided by a depression into a lower promi-

nently rounded half and an upper more flattened mass. The growth involved the scapula, and completely fixed the shoulder-joint, but the whole mass with the scapula moved freely over the thorax. The skin was not broken, but was tight, and cracked over the posterior part of the growth, where it was of a dark-red colour. The tumour throughout was hard and bossed here and there. Its circumference at the most prominent point was twenty-four inches. The glands in the axilla and neck were not enlarged. The chest and abdomen were healthy. On July 4th, 1883, Mr. Heath made an oval incision as for amputating at the shoulder, and, having stripped back the skin, cut upon the position of the shoulder-joint, and removed the arm, necessarily leaving a large mass of growth attached to the scapula. The axillary artery was tied with hemp ligature, and the neck of the scapula, with the glenoid cavity and inferior border of the bone, was sawn off. Mr. Heath next removed the scapula, first dividing the clavicle at its outer third, and then isolating the posterior border of the scapula. The wound was dressed on the second and fourth days, and the patient made an uninterruptedly good recovery. The highest temperature was 104° on the eighth day. He was discharged on August 30th, being only fifty-nine days in hospital. The part removed consisted of a large mass of ossifying sarcoma surrounding the upper end of the humerus, and firmly united to the scapula and clavicle, the growth extending down the humerus to the junction of the upper and middle thirds. The scapula itself was but slightly affected, the growth extending backwards for a short distance around the neck of the bone and down the axillary border. The growth extended into the subscapularis, teres minor, and, slightly, the infra-spinatus muscles. The cut end of the clavicle was healthy. Microscopically, the growth was found to be a sarcoma of mixed small cells and oval corpuscles, with extensive ossification, in the shape of bony spicules, running through the tumour. In none of the spicules were Haversian canals to be seen, but lacunæ were normally developed. Mr. Heath added that since the patient was last seen a small loose nodule had sprung up near the cicatrix, which he proposed to remove at once.—Mr. BUTLIN thought that the recurrence, the great extent of the disease, and the general and microscopical characters proved that the growth was of a malignant nature. The glands were not affected, as was usual in subperiosteal growths unless they grew directly into lymphatic vessels.—Mr. BARWELL had performed a somewhat similar operation for the late Mr. Hancock. The growth recurred, and was considered to be malignant.

Dr. HENEAGE GIBBES exhibited a number of the different forms of Putrefactive Bacteria:—A section of Diphtheritic Membrane showing two forms of micrococci, one large in groups, the other much smaller in masses. A section of Human Spleen from a case of Tuberculosis, showing large micrococci in groups; similar organisms were found in the lungs and liver of this case. Sections from the Livers of two Pigs which had died of the Purples or "Red Soldier"; sections of these livers were full of bacteria, but the forms were quite different in each; in one liver the bacteria consisted of short rods not joined together, in the other they were very long and slender; section of kidney from one of these cases showed the vessels full of a form quite different from those in the liver. Stool from a case of Infantile Diarrhœa, showing organisms very similar to those in the specimen of rice-water stools sent by Prof. Straus. Very large organisms from the stomach in a case of Carcinoma of the Pylorus. Spirilla, vibriones, various other forms of bacterium in chains, and micrococci from putrefying animal matter in water, were also shown. Section of Mesenteric Gland revealing the so-called Typhoid Bacillus, shown with a $\frac{1}{12}$ oil immersion × 800. Human Sputum from a case of Tuberculosis; one specimen showed nine different forms of bacteria, and this with an oil immersion lens magnifying 600 diameters. These specimens were shown with Messrs. R. and J. Beck's new pathological microscope, made from Dr. Gibbes' designs.

CLINICAL SOCIETY OF LONDON.

Thrombosis of Vena Cava.—Charcot's Joint Disease.—Dislocation of Semilunar Cartilage.

THE ordinary meeting of this Society was held on Friday, February 22nd, Sir Andrew Clark, Bart., President, in the chair. The number of living specimens shown was a decided feature of the proceedings; the keen interest which was excited by this clinical display affords abundant evidence of the partiality of the members for practical medicine and surgery.

Dr. MANSELL MOULLIN brought forward a case of Thrombosis of the Inferior Vena Cava. The patient, a man aged thirty-five, was admitted into the London Hospital in August, 1883, for varicose veins and ulceration of the left lower extremity. He was employed as a paper-hanger, and had been a trumpeter in the army. There was no history of syphilis or gout. A year and nine months before admission he fell down a staircase on to his back, cutting his right leg severely and falling with his loins across the hand-rail. From the effects of this accident he was confined to bed for five weeks, his right leg, the one injured, becoming much swollen. While in bed, three weeks after his fall, he noticed that the veins in the lower part of the abdomen were enlarged, and from that time they have gone on gradually increasing in size and spreading in extent up to the present time. There does not appear to have been at any time either general anasarca or hæmaturia. On admission it was noticed at once that the abdomen was covered with great clusters of tortuous veins, which might be divided into three main groups—two on the left side, the one having its origin in Scarpa's triangle, and the other just above the crest of the ilium; and the third on the right, behind, some four inches to the right of the vertebral column; and from these main groups great coils of enormously distended veins stretched upwards, gradually diminishing in size as they reached the thorax and could pour their contents into the superior epigastric, intercostals, and long thoracic veins. The right epigastric was but slightly enlarged in comparison, but in this, as in all the rest, the currrent was upwards in direction. The left limb was so swollen as only to be lifted with difficulty; the right, six inches less in circumference, was almost normal. In the abdomen was a large ill-defined mass lying in front of the vertebral column, most prominent opposite the umbilicus, and running down to the right of this a line along which pulsation and a systolic thrill and bruit could easily be ascertained. Besides this, in the large left lumbar cluster were a continuous thrill and an exceedingly loud bruit. There were no signs of aneurism, the pulsation in the abdomen being distinctly non-expansile; the lungs were emphysematous; the heart slightly enlarged and the aorta dilated; there were no hæmorrhoids, or varicocele to any extent, or albuminuria. The diagnosis made was that of thrombosis of the inferior vena cava, with a clot extending down through the left iliacs to the femoral on that side, the ill-defined tumour in the abdomen being the plugged inferior cava, with swollen and œdematous tissue round it, the line of pulsation corresponding to some large abdominal vessel, probably the superior mesenteric displaced to one side. The thrombus could never have extended above the renal veins, but there is no evidence to show whether it originated in a small trunk and spread till it involved the cava, ceasing where the renal veins poured in a large current or started in the cava itself. There is, however, little doubt, from the time of its occurrence, that it must be directly connected with the accident. Reference was made to a case published by Robin, in which violent exertion while in a stooping position produced the same result, and to other cases, which tended to show that complete obstruction of the inferior cava need not of itself cause appreciable enlargement of the external veins or much œdema. —The PRESIDENT inquired whether the urine was normal. If it were so, it was surprising when the great extent of the affection of the veins was borne in mind.—Dr. MANSELL MOULLIN said that he had not examined the urine for three months, but it was healthy at that time.

Mr. R. CLEMENT LUCAS read a paper on Charcot's Joint Disease attacking the Right Elbow and Foot. The patient, a man aged thirty-nine, came under notice last autumn, and was at that time exhibited at the Society. His father died of heavy drinking and consumption. His mother was still living, but suffered from dropsy and asthma. He was one of nine children, seven of whom were living. One brother was a cripple from paralysis of right side from birth, but lived to be forty. The patient denied having had syphilis, and there was no history of fits or insanity in the family. He had been much exposed, as a hawker, to wet and cold, and had drunk freely. About four or five years ago he became subject to rheumatic pains. He had had neither girdle-pains nor gastric crises. For twelve or eighteen months he had had occasional numbness in his hands, especially the right, and had found a difficulty in buttoning his collar and

in walking in the dark. Eight or nine months ago he had an attack of double vision, which lasted only about a week. He occasionally felt giddy when starting to work in the morning, but was unconscious of any defect in walking. About two years ago his right elbow became enlarged, but not very painful. He sought advice, and was treated with blue ointment. He had continued to work with this arm ever since. A few weeks before being seen his right foot became somewhat suddenly enlarged, red, and painful, and it was on this account that he came under observation. The swelling extended from the malleoli to the bases of the metatarsal bones, and occupied the dorsum and sides of the tarsus. It was neither œdematous nor tender, but he sufferred from aching pain beneath the head of the astragalus, especially after walking. The right elbow-joint presented a remarkable deformity. On the back of the ulna, two inches from the tip of the olecranon, was a rounded projection about the size of half a Tangerine orange, two inches in diameter and bony at the base. Between the head of the radius and the olecranon was another projection, sharp, prominent, and bony, apparently growing from the radius, and another prominence continuous with this between the head of the radius and the external condyle. These latter projections absolutely prevented all pronation and supination. A small outgrowth sprang from the inner side of the olecranon, and projected beneath the internal condyle. In front of the joint, just external to the tendon of the biceps, was a rounded swelling an inch and a half in diameter, covered by muscles. Flexion of the elbow could be carried to the normal limit, but extension was arrested at an angle of 150°. The joint was free from pain. It measured about two and a half inches more in circumference than the other. The signs of locomotor ataxy were as follows:—He was unsteady when his eyes were closed; if told to touch his nose with his eyes shut he often missed the mark; he had difficulty in walking in the dark and in buttoning his shirt collar. His pupils were not contracted, but unequal, and insensitive to light; the patella reflexes were entirely absent. Mr. Lucas alluded to the liability there was of these cases being mistaken for osteo-arthritis. He thought it rare for the joint affection to be in advance of the ordinary symptoms of ataxy. More generally the paralytic symptoms had existed some time before the joints suffered. Surgeons had been blamed for not recognising the disease. The symptoms he thought were sufficiently distinct, but the disease was not common among surgical out-patients.—The PRESIDENT said there was an apparent discrepancy in the report as to the presence of pain. Was there any eruption at any time?—Mr. CLEMENT LUCAS said the foot occasioned some inconvenience in walking. The elbow was almost painless. There was no eruption.—Dr. BUZZARD said that the case illustrated how such cases were overlooked, for even Mr. Lucas had not detected the nature of this case when first examined. In those instances where the ataxic gait was wanting, the dependence of the joint affection on "locomotor ataxia" might not occur to some surgeons. He related the case of a man with Charcot's disease of the right shoulder where the gait showed nothing abnormal, and which had not been recognised, though it had passed through the hands of at least one, and probably two, hospital surgeons. So he still thought a good many of these cases were overlooked. This man had no ataxy of the legs; but he was a cabinetmaker, and his handicraft was impaired, for he could not saw in a straight line or hit a nail with precision; there was, in fact, incoördination of the movements of the upper limbs. Examination also detected paresis of muscles supplied by the right oculo-motor nerve. "Rheumatic" pains and numbness of the extremities of the fingers were also present. The joint swelling had appeared suddenly, and had been much greater than when he first saw the case. There was a "scraunching" feeling on moving the joint, but no luxation had occurred, and no bony outgrowths were to be felt. In Mr. Lucas's case there was much bony growth about the ulna and radius, and no large amount of fluid in the joint. The destructive process as regards the ligaments seemed not to have taken place to its usual extent, hence there was not that opportunity for attrition and wearing away of the bones. It was a remarkable characteristic that the ligaments suffered first of all in some cases, so we had an extraordinary laxity of the articulations. The ankle might turn in and nearly touch the ground in such cases. With regard to the seat of the lesion, he was now more strongly inclined to think that some connexion existed between the medulla oblongata and this effect on the joints of the body. He had come across a great number (more than 50 per cent.) of instances of laryngeal, gastric, or intestinal affections, associated with bone-joint troubles, which tended to support his views. He said all parts of the spinal cord might be diseased without there being any joint affection. Some sclerosis attacking the vagus "centre" was probably the cause of the damage of the nutrition of the bony skeleton in the disease in question. The facts seen in acute rheumatism supported such a hypothesis. The "centre" might possibly be the vaso-motor centre.—Dr. HALE WHITE spoke of a diseased pelvis which he had shown at the Pathological Society, and which Charcot and Féré had now pronounced to be an undoubted example of a rare kind of Charcot's disease. This was the first post-mortem specimen which had been exhibited in this country. Some had said that the joint disease was not due to a nerve disorder; others had maintained that if it were due to a nerve lesion, it presented no peculiarity whatever that might not be explained by the circumstances of the case. Weir Mitchell had said it was impossible to distinguish a case of arthritis due to nerve lesion from other forms of joint affections. Cerebral softening or hæmorrhage was sometimes associated with joint trouble; these cases might be regarded as forming a connecting link between the two classes of cases.—Dr. ALTHAUS could not agree with the "central" hypothesis of Dr. Buzzard. Local lesions of peripheral nerves had been demonstrated to exist in such cases. Peripheral neuritis was of frequent occurrence in locomotor ataxia. In some cases of severe locomotor ataxia he had found no evidence of anæsthesia. He had frequently seen ichthyosis, or herpes, or other cutaneous eruptions in connexion with the disease.—Dr. BUZZARD said that in one case Charcot had found the anterior horns of the spinal cord healthy, and also the peripheral nerves; so there was one case at least in which the hypothesis of peripheral neuritis did not obtain.—Dr. MOXON had seen a great deal of locomotor ataxia, and the notion of the frequency of the joint affection ran counter to his experience. He would like to know whether the affection was truly peculiar and special to ataxic patients. Before we asserted this we ought to have in our mind's eye the proportion of ataxics to the whole population as well as the proportion of cases of chronic rheumatic arthritis. It could not be said that ataxics had immunity from the sufferings of the rest of humanity. It was fully possible for locomotor ataxia and chronic rheumatic arthritis to put a cross upon one another when they happened to coexist. He had met with cases of gastric crises indistinguishable from those of locomotor ataxia, and chiefly of nocturnal occurrence, in governesses and pupil teachers. In that over-scrutinised disease, locomotor ataxia, it was the fashion for everything that happened to a patient afflicted with it to be said to possess an epiphenomenon. He could not accept such views. Dr. Buzzard's centre in the medulla seemed to be a very wonderful Secretary of State for the Bone Department.—The PRESIDENT said that he had seen cases of curious joint affection associated with symptoms of chronic cerebral disease.—Mr. CLEMENT LUCAS said that his case had much exostosis and was exceptional. The disease was quite unlike any case of osteo-arthritis he was in the habit of seeing. He felt sure that the malady was an entirely distinct and peculiar disease of the joints.

Mr. NOBLE SMITH read notes of a case of Dislocation of one of the Semilunar Fibro-cartilages of the Knee-Joint. The left knee was first injured sixteen years ago by a fall. Great pain was felt, and while being carried home the patient was upset, the knee again twisted, and the intense pain immediately relieved. This history was considered as characteristic of displacement of one of the cartilages. The patient was unable to move for many months, rest and local applications being prescribed. After nine months walking was recommenced. The subsequent history was that of repeated injury from trivial causes and a continued state of weakness of the joint, with discomfort or pain during movement. The same kind of treatment was always prescribed, and in the course of weeks or months after each accident the patient would gradually recover sufficiently to be able to get about again, but always with difficulty. On Nov. 11th, 1882, this patient was first seen by Mr. Noble Smith. A stiff knee-cap was being worn, and any locomotion was very difficult. Rest as complete as possible had lately been again recommended, and the advice was being carefully followed. The knee was slightly flexed, and could not be moved without pain. The internal cartilage of the

left knee was felt to project slightly beyond the upper border of the tibia. Upon pressure being applied to this protrusion while the leg was flexed and extended repeatedly, the cartilage was felt to slip back, after which the patient walked round the room quite naturally, and felt a relief which had only once been experienced since the first occurrence of the accident. A pad was strapped over the place where the cartilage had protruded. During the next few weeks there was a tendency to relapse, but by perseverance with the treatment the joint was gradually worked into a natural condition. An apparatus was made which, while it permitted flexion and extension of the leg, prevented lateral motion and twisting. Walking exercise was recommended from the first, provided no pain was felt. This patient has remained quite well up to December, 1883. Several similar cases had been met with by Mr. Smith. This displacement, which was first described and the appropriate treatment devised by Mr. Hey of Leeds, is to be distinguished from inflammatory disorders and the presence of loose cartilages. The variety of the conditions which may occur are described by Hamilton. Bonnet of Lyons experimented upon a dead body, and produced displacement of the inner cartilage, and subsequently reduced the dislocation by extension. The experiment was frequently repeated with a similar result.—

—Mr. HOWARD MARSH said the apparatus mentioned by Mr. Smith was devised by Sir James Paget. The internal semilunar cartilage was said to be more commonly displaced than the external cartilage, which was also commonly affected. Mr. Godlee had shown a case in which the internal cartilage was lodged in the intercondyloid notch of the femur. Cases of displacement of the external cartilage which had become crumpled up behind the femur, and cases of displacement of the external cartilage in front of the femur, were also mentioned. We must suppose either that there was great relaxation of their attachments or else absolute tearing away from their attachments. Cases occurred in football where the kicking leg missed the ball. The case related by Mr. Brodhurst showed how a loose body appeared in the knee which turned out to be the posterior two-thirds of the lacerated external semilunar cartilage. It would appear that the femur overshot the cartilage, and so the joint became locked. The mechanical treatment was singularly successful; he had now used the clamp in at least thirty cases with success.

Dr. TYSON of Folkestone related a case of the affection in which an elastic knee-cap had not been successful. The adoption of the tailor's posture, which flexed and rotated the limb outwards, succeeded in restoring the extended position of the limb. He was glad to have heard of the proper instrument.—Mr. CLEMENT LUCAS referred to cases in which the semilunar cartilage had become displaced on the outer side. Two examples of this were narrated.—Mr. NOBLE SMITH said that in all his cases it was the internal cartilage. The sudden movement forwards and nothing to stop it was the cause of displacement. His apparatus combined the action of both the instruments devised by Sir James Paget.

A committee, composed of Drs. Moxon, Douglas Powell, Frederick Taylor, and Fowler, was formed to report on Dr. Kingston Fowler's case of pulmonary regurgitation.

Several living specimens were shown:—Mr. Morrant Baker showed a case of Anomalous Affection of Certain Bones and Joints; Dr. Buzzard, a case of Charcot's Joint Disease; Dr. Stephen Mackenzie, a case of Excessive Sweating of the Upper Half of the Body of a Man; Mr. Symonds, a case of Congenital Hypertrophy of one Leg and Prepuce; Dr. Kingston Fowler, a case of Pulmonary Rugurgitation; Mr. Clement Lucas, a case of Excision of the Patella; Mr. Rickman J. Godlee, a case of Nodules on the Finger.

MEDICAL SOCIETY OF LONDON.

Treatment of Enteric Fever by Cold.

THE papers and discussion on the treatment of enteric fever by cold were brought to a close at a late hour on Monday last, Sir Joseph Fayrer, President, in the chair.

Dr. FREDERICK TAYLOR contributed the results of the Treatment of Enteric Fever by the application of cold as practised at Guy's Hospital. The method employed had been—(1) The bath at 70° or 75° F.; (2) sponging with ice-cold water; (3) the wet pack, with ice-cold water; (4) the application of ice-bags in the axillæ; (5) Leiter's coils of tubing for the continuous flow of water. As the cases were under different physicians, the treatment was not precisely the same in all instances; the majority were treated by the bath, but many cases had also sponging or other cold application, and in others the sponging or other method was alone used. The cases were considered together, because all these methods effect a decided reduction of temperature. As a rule, the temperature was taken every three hours, and the patient was bathed when the temperature was found to be 103° or more. In some cases 104° was taken as the standard. In estimating the results of the treatment, the mortality, the complications and sequelæ, including relapses, and the general effect upon the patient's immediate comfort were considered. During the preceding ten years, 1874 to 1883, 440 cases of enteric fever had been treated at Guy's Hospital, of which 78 were fatal, giving a percentage of 17·7. The mortality varied from year to year, being low in 1874, 1875, and 1876, very high in 1879 and 1880, and about the average in 1882 and 1883. Of these cases, 100 were submitted to some kind of cooling treatment, by bath, cold sponging, or ice-pack; and of these 27 were fatal. This greatly increased mortality was partly explained by the cases treated by cooling measures including a much larger proportion of severe cases. The influence of the bath on the cause of death did not seem to be very striking, the proportion of cases in which perforation and peritonitis occurred being very nearly the same in those treated by cold as in the total number of cases; but the proportion of deaths by hæmorrhage was somewhat greater. Against the large mortality amongst the bathed cases, it is important to notice that many cases were submitted to these measures very late in the illness, and many were only partially treated. The mortality in 49 cases treated on or before the tenth day was 20·4 per cent., in 50 cases treated after the tenth day it was 30 per cent., in 30 cases treated on or before the seventh day it was 16·6 per cent., while in 69 cases treated after the seventh day it was 28·9 per cent. Then, again, of the fatal cases, in four-fifths the treatment was begun after the seventh day. As to the frequency of the baths, only 9 cases had as many as ten baths; of these 2 died, and only 12 had as many as ten cold sponging, of these three died. It was constantly observed that the effect of the bath was greater than that of sponging, and the relative mortality indicated the same. Of 28 cases sponged only, 6 died, or 21·4 per cent.; of 45 cases bathed only, 9 died, or 20 per cent. Of these 45 cases, the deaths occurred amongst those who had fewest baths; the 11 cases who had more than five baths all recovered. It was not found that the bath had any striking effect upon complications, with the one exception of hæmorrhage, as illustrated by the fatal case. Thirteen cases had hæmorrhage, but in the majority of these it was obviously unconnected with the use of the bath. The bath did not appear to aggravate bronchitis, or increase the tendency to relapses, or lead to other complications. The immediate effect of the bath was to lessen delirium, induce sleep, and generally improve the condition of the patient for the time. Dr. Taylor concluded that though the bare figures did not show to the advantage of the bath, it was clear that in proportion as the patients came early under treatment and were thoroughly treated, the results were better. After some general remarks on the use of the bath Dr. Taylor recorded a case which happened at the Evelina Hospital, in which occurred the complication of pulmonary hæmorrhage, to which Dr. Coupland had drawn attention.—Sir JOSEPH FAYRER said that he had received a letter from Surgeon-General Townsend, C.B., which told how among the hill people in India the poor women had to take their babies with them to work wrapped in cloths; the quietude of the children was attained by keeping their heads constantly bathed in a cooling stream of water, such treatment induced sleep, and no ill consequences ever resulted from its employment.—Dr. CAYLEY first pointed out that much of what had been brought forward was not antipyretic treatment; by thorough antipyretic treatment was meant the employment of means for reducing the temperature from the first, and continuously throughout the course of the case. The failure of heart and respiratory power, which so much tended to produce collapse of the lungs, of which Dr. Bristowe had been so frequently frightened, was really much less frequent in cases treated systematically with cold. He further criticised Dr. Bristowe's remarks. Was it more scientific to use a chemical balance or to infer from muscular impressions, or was the microscope of no value because some

observers had originally made errors therewith? These questions were asked in part reply to Dr. Bristowe's objection to statistics. Dr. Cayley contended that if statistics conformed to certain canons, if they extended over a sufficient length of time, included large numbers and dealt with like cases, they could certainly be trusted. Dr. Bristowe had said that the cold bath treatment of enteric fever had fallen into disuse in Germany. But was it not true that the Minister of War for Prussia had ordered its employment in the Prussian army? And Dr. Sagetzky had said, "We only here and there meet with a solitary opponent." Dr. Cayley next proceeded to give statistics from the London Fever Hospital. Murchison had shown that the disease was much more fatal among the well or overfed classes—the rate of mortality was much lower amongst the Irish both in Ireland and England. The mortality for six years after 1865 showed an average death-rate of 14 per cent.; from 1872 to 1878 it was 17 per cent.; and from then onwards it was 14 per cent. During the last period the cold treatment had been in vogue. When it was remembered that during the first period the number of poor patients was considerably greater than later on, and when it was understood that among the better classes the mild cases would be treated at home and only the bad cases be sent to the hospital, we might see some reason for believing that even the reduction of 3 per cent. told something in favour of the cold treatment. The tables also showed, at first sight, an increase in the number of deaths from hæmorrhage and perforation under the cold treatment; but this was probably a fallacy, and due to insufficient numbers and to the fact that bad cases came into the hospital late in the disease. At Middlesex Hospital the percentage of fatal cases under the cold treatment was 11·8 per cent. But, lest these numbers be considered not numerous enough and not to extend over a sufficiently long period, the statistics of the Charité Hospital, at Berlin, were quoted as of unbiased source and as fulfilling the conditions of reliable statistics which he had previously laid down. From 1848 to 1867, 2228 cases were treated with 405 deaths, or 18 per cent., being pretty much the same as in our general hospitals. From 1868 to 1876, 2086 cases, with 267 deaths, or 13 per cent., this being under the employment of cold-water treatment. Again, the Prussian army statistics showed from 1868 to 1874 a mortality of 15 per cent.; whilst from 1874 onwards, under the cold treatment, the percentage was 9·7 per cent. From French sources, information is obtained from Jaccoud that from so large a number as 80,000 the percentage mortality was 19 without and 11 with the application of cold. No doubt there were a large number of cases in which the treatment was not applicable. He thought the bath better than large and repeated doses of antipyretic drugs. With regard to the mode of action of cold he considered that it answered to physiological indications—viz., to diminish metabolism, the excessive character of which Murchison believed gave rise to deleterious products which induced the symptoms of the typhoid state. The stimulating effect of the bath on the vaso-motor system counteracted that conspicuous want of vascular tone and tended to prevent granular degeneration and softening of parenchymatous organs. Further, the symptoms of the disease were materially alleviated, the delirium, dry brown tongue, &c., ceased to form prominent features of typhoid fever when genuine antipyretic treatment was adopted. The opinion (that typhoid was robbed of its terrors) of Dr. Austin Flint, who was not an ardent advocate of the system, was a piece of valuable testimony. It was further contended that the complications were not rendered either more severe or more numerous. Lastly, it was to his mind incontrovertibly proved that the mortality was greatly reduced.—Dr. SAMUEL WEST thought that the doctrine of fever on which the treatment was placed was not sufficiently comprehensive. Liebermeister had said that the temperature was the practical cause of fever and of the dangers which arose from it. But he maintained that we ought to regard diarrhœa, exhaustion, perforation, and hæmorrhage as of possibly like importance with the temperature in considering the nature of enteric fever. So many reservations and conditions had to be made that he could not accept Liebermeister's position. No doubt high temperature was a danger to life, but it was not the only danger. All the complex coördinate symptoms which went to make up the phenomena of fever were as yet insufficiently understood; and the theory being incomplete, so the treatment on which it was founded must be likewise considered. It was a specious and dangerous argument to say that because the treatment did good therefore the theory was right. With regard to the applicability of statistics, he could not agree with Dr. Coupland. The inaccuracy of observation, the insufficiency of data, and the disturbing causes which play a part in typhoid fever, rendered unreliable even comparative statistics. He had drawn up statistics for twenty-three years from St. Bartholomew's Hospital. These showed the enormous variations of the mortality from year to year, in some being 6 per cent., in one 30 per cent. Out of 1668 cases there were 272 deaths, or a mortality of 16·9 per cent., which was pretty much the same as Murchison had given. Even taking the average of the ten years, the variation was greater than the relative number supplied by Dr. Cayley. The results of the practice of four physicians at St. Bartholomew's Hospital were next compared. These figures went to show the remarkable variation in the rate of mortality. At the hospital mentioned the general feeling was that the cold bath treatment was needless, and often harmful in ordinary cases, but was the only resource in certain cases of hyperpyrexia. Dr. West summed up his conclusions as follows:—1. That the cold water treatment of typhoid fever was based upon what appeared to be a one-sided view of the process of fever. 2. That the question was one which could not be satisfactorily settled by statistics. 3. That a general opinion had gradually developed which, whatever statistics might appear to prove, could not be disregarded against the indiscriminate use of bathing and in favour of its use in appropriate cases. 4. That whilst not denying that in hyperpyretic cases cold bathing was the most valuable of the known methods of treatment, in the less severe cases it stood only on the same level as many other antipyretic remedies. 5. That the success of the treatment depended chiefly upon the clinical skill which recognised the proper circumstances for its use.—Dr. GILBART SMITH showed that out of 456 cases there were 68 deaths, or a mortality of 14·9 per cent., in the London Hospital. That during 1883 the treatment by cold was still in vogue at the London Hospital, and had not fallen into disuse, as Dr. Bristowe had imagined, in all the metropolitan hospitals. Dr. Gilbart Smith was in favour of employing antipyretic means, but preferably some other form than the bath. He thought the employment of the apparatus for a hot air bath might be utilised so as to give a cold air bath. This method of "cradling" he had found at times distressing, but he was of opinion that some method for its management might be devised. The influence of nationality on typhoid fever was alluded to. At Milan the Italians were unable to digest milk during typhoid fever, whilst English people treated at the same hospital were able to take a milk diet.—Dr. A. T. MYERS laid before the meeting some facts from the medical register of St. George's Hospital during the last seven years, 1877 to 1883. Out of 281 cases 69 had been fatal, which gave a death-rate of 24 per cent. Neither cold water nor strong antipyretics had been used. The treatment was characterised by the free use of alcohol, and was otherwise of an expectant nature. With regard to cases which come under early treatment, he could not agree with Dr. Coupland's conclusions. The death-rate at St. George's was greater in the cases which came under treatment earlier. The great difference in the total death-rate was due to the strict use of the term enteric fever. Doubtful cases were not included. He thought abundant statistics and good logic were required to settle the question.

Dr. MAHOMED'S paper was read by the secretary, Dr. ISAMBARD OWEN. The ordinary death-rate was given as 16 per cent. With the proper employment of cold treatment, 10 per cent. was regarded as the lowest figure attainable with hospital cases. But no doubt it was very much less in private practice. Brand's statistics could not be compared with hospital ones, for they were practically those of private practice, since all cases occurring in the barracks would be brought under notice and treatment. Of cases whose chance of life and death might be influenced by treatment there were about six in 100. He would bathe when the temperature was over 102°; the bath was comforting and refreshing; but we must adapt our methods to the requirements of individual patients. Besides the use of cold, the employment of quinine was recommended, or kairin, which was the surest and most powerful agent, if pure. He thought the early use of the bath of great value. The influence of habit was great. Habit tended to regulate the progress of the fever: it might be made to strengthen good signs and correct bad ones. The reduction of pyrexia had no

relation to the local lesion. The application of cold did not influence the progress of the local lesion. The bath ought not to be used colder than 70°, and ought not to be continued longer than five minutes. The collapse of lung mentioned by Dr. Bristowe was not uncommon in death from enteric fever not treated by cold. Pneumonia and scarlet fever were favourable illnesses for the use of cold. Old people do not stand cold well.—Dr. ISAMBARD OWEN said the strict application of the term enteric fever was, no doubt, the cause of the high death-rate at St. George's. Butlers and cooks were bad subjects for enteric fever in his experience, and required a large amount of alcohol.—Dr. BROADBENT said that the case for the cold bath had never been better stated than by Drs. Coupland and Cayley. He was decidedly in favour of the employment of the cold bath. He would use sponging if the temperature reached 102° F., and bathing if 104° F. He thought the severity of the disease was proportionate to the temperature. High pyrexia during the first few days was a strong indication of the future course of the fever. The form of enteric fever known as "bilious" was no doubt an exception, and the temperature might remain low in that variety. He gave his personal unbiased opinion that many lives were saved by the bathing, and he had never seen evil consequences follow its use. He had seen pulmonary complications and albuminuria clear up immediately with subsidence of the large abdomen after cold bathing. Perhaps the cold bathing protracted the fever. The only contraindication was the occurrence of intestinal hæmorrhage.—Dr. MACLAGAN could not coincide with Dr. Coupland's views. The blood would be driven away from the surface by the cold, and so the tendency to bowel complication was increased, and with it the danger to life. And Dr. Coupland's figures showed that the mortality was greater. He did not think that a high temperature was the only source of mischief, for it was not found at the period of greatest danger. The intestinal lesion was of the greatest moment in typhoid fever. He thought that the cold bath was going through the same phases as the employment of other remedies—e.g., quinine, salicylates, &c., in medicine.—Dr. SANSOM had employed the cold treatment since 1871. He sponged if the temperature reached 102°, and bathed if it attained 104°. He considered that the statistical method was the only useful one for the great body politic of medical men. He had no hesitation in believing that the mortality was in some sense reduced since the introduction of cold applications. His individual experience proved to him that the employment of cold was free from danger and from the occurrence of complications. He treated pneumonia with cold water. He had found pale lungs at the autopsy of enteric cases so treated.—Dr. KINGSTON FOWLER had had considerable experience in the treatment of typhoid fever, and believed that the application of cold was of undoubted value.—Dr. SAMUEL WEST explained that he had only directed his criticism against the cold bath and not against antipyretic treatment.—Sir JOSEPH FAYRER had treated cases of hyperpyrexia in India with ice and the cold douche with great success.—Dr. COUPLAND, in reply, said that he recognised the untrustworthiness of statistics taken alone, and he had set no store by them. He was glad to hear that Dr. West was not attacking the antipyretic treatment. Dr. Bristowe had argued that *a priori* we should expect internal inflammations, but experience proved that *a priori* reasoning did not hold good. Dr. Coupland had shown that of the cases admitted early in the course of the disease the majority recovered. In reply to Dr. Maclagan, he pointed out that the apparent increase in the death-rate from perforation and hæmorrhage under the use of cold was not attributable to the bathing. He was sure that intestinal hæmorrhage was not increased. We must surely set experience against theory, and in fact the pulmonary congestion was improved. He read a letter from Dr. Lendon, stating that the systematic use of cold baths in private practice was within range of practicability.

OBSTETRICAL SOCIETY OF LONDON.

A MEETING of the Society was held on Wednesday, Feb. 6th, Dr. Gervis, President, in the chair.

Auvard's "Nest."—Dr. MATTHEWS DUNCAN exhibited the "nest" or "incubator" of Dr. Auvard. A similar machine had been used for some years in the Paris Maternité by Dr. Tarnier, but upon this Dr. Auvard's was an improvement. It was planned to maintain a uniform temperature. It was simple, cheap, and useful. Dr. Auvard stated that by its use the mortality of children under 2000 grammes weight at birth had been reduced from 65 to 38 per cent. The child was placed in it clothed. The machine was kept warm by hot water bottles, the air moistened by passing over damp sponges, and ventilation kept up and watched by a little anemometer. Any ordinary nurse could manage easily the whole matter.—Dr. FANCOURT BARNES had seen a similar machine in use at the Hôpital Tenon. He believed that Dr. Tarnier, not Dr. Auvard, was its originator.

Hearson's Incubator.—Dr. GODSON exhibited Hearson's incubator, and introduced its inventor, who explained it.

Monstrosity.—Dr. HORROCKS exhibited this specimen, which belonged either to the order exencephaliens or pseudencephaliens; it was not possible, until it had been dissected, to say which.

Uterus removed per Vaginam.—Dr. W. A. DUNCAN exhibited an entire uterus with epithelioma of the cervix, successfully removed per vaginam by Schroeder's operation.

New Cephalotribe.—Dr. FANCOURT BARNES exhibited a new cephalotribe he had had made. It was long, with a French lock, the perineal curve, and Aveling's handle curve. It allowed traction to be made in the brim of the pelvis.—The PRESIDENT was accustomed to use Hicks's cephalotribe.—Dr. ROBERT BARNES had put this instrument to a practical test, having used it in a case of contracted pelvis in which he had failed to deliver both with his own forceps and with Tarnier's. It worked admirably, and he thought it might be stamped "*probatum est.*"

The business of the annual meeting was then proceeded with. The list of officers proposed by the Council was accepted by the Society, and the President delivered an address (see THE LANCET, Feb. 23rd, p. 329).

A Lost Medical Work.—At the annual meeting of this Society, Dr. Aveling mentioned that the Society had some time since asked Dr. Fordyce Barker of New York to have made for them a transcript of Woolveridge's "Speculum Matricis." This book, published in Dublin in 1670, is the earliest original work on midwifery in the English language, and the only copy known to exist was in the possession of Dr. Fordyce Barker, who, at the request of the Society, employed a man to copy it. This person absconded with the volume and died in Europe. Thus, it is feared, the only copy of this work has been irretrievably lost. It is asked that if any of our readers should meet with or hear of a copy of this rare book, they will communicate with the honorary librarian of the Society.

GLASGOW PATHOLOGICAL AND CLINICAL SOCIETY.

Discussion on Albuminuria, its Pathology and Clinical Significance.

A MEETING of the Society was held on Tuesday, Feb. 19th, Dr. McCall Anderson, President, in the chair.

Professor GAIRDNER stated that previous to the time of Bright, albuminuria was usually considered to be a mere secretion or transudation of blood serum, and he raised the question as to whether or not this was altogether an error. Bright himself did not do or say anything to change this view, but he insisted on and proved the fact that this leakage or exudation represented in many cases, and always when associated with dropsy &c., a change or changes in the structure of the kidney, which, when chronic, were mostly irreparable. He then considered the question whether Bright's disease was one or several distinct diseases. Bright did not dogmatise on this point, but subsequently to his time diseases, which are not now described as characteristically Bright's disease, were regarded as such—e.g., fatty kidney, cystic kidney, &c. No doubt the impulse given by anatomical researches produced a marked effect upon current opinions by too exclusive attention to cases tending towards a fatal termination,—practitioners were discouraged in the treatment of Bright's disease, and the prognosis was rendered unduly grave. Dr. Gairdner referred to the case, mentioned by Dr. Roberts in his address at the last meeting, of a patient suffering from albuminuria, in whom the left ventricle had become hypertrophied, and remarked that such a circumstance was very unusual, and therefore of great interest. But still it must be admitted that the prognosis in Bright's disease, except in the more acute form, and even in some cases of the acute form,

is very unfavourable, perhaps regarded unduly so, owing to the absence of post-mortem evidence of the case. It has been shown, however, by examination after death that persons recover from organic disease of the kidney, just as it has been demonstrated that recovery from phthisis, tuberculosis, &c., is possible. He then remarked that there were various opinions entertained with regard to the unity underlying Bright's disease, of which albuminuria is but one expression, and said that in his opinion, although the different forms might vary in detail, yet there were distinct indications of an obvious relationship between them. Dr. Gairdner said that in his own early experiences of pathological investigation in kidney diseases he used to liken renal albuminuria to pulmonary catarrh of the final or terminal air-tubes, not only in respect of its being a transudation or exudation of proteids from the blood, but also because of its leading up to indefinitely numerous disorganising lesions without being itself a disorganising lesion. As our field of experience ranges over simple or grave cases, so will our prognosis be favourable or the reverse. Probably the current ideas of the last half century have been towards a too grave prognosis on the whole; but this is a long way from accepting Dr. Roberts's proposition of an albuminuria of health, or still more a physiological albuminuria. Albuminuria may occur in persons apparently healthy; but may it persist or become habitual without being regarded as a morbid or abnormal condition? Dr. Gairdner mentioned a case where a patient had a distinct cardiac murmur persistent since boyhood, and who was ultimately the father of two families, and yet there was no indication other than the murmur of any disease. He also referred to a case where there was crepitation over the upper lobe of one lung heard on every occasion when sought for, and yet not associated with any evident deterioration of health, and asked if these cases, from the fact that they were not accompanied by discomfort to the patient or visible evidence of disease, could be regarded as physiological. But while he did not dispute the facts brought forward by Dr. Roberts, he was inclined to consider the presence of albumen in the urine as at least a warning which could not be altogether overlooked.

Dr. MORTIMER GRANVILLE restricted his remarks to the second phase of the subject—namely, "the clinical significance of albuminuria," discussing the physiological pathology of the presence of albumen in easily discoverable quantities in the urine. In his opinion the influence of the nerves of the kidney in their connexion with, and relation to, the cerebro-spinal centres, more particularly the vaso-motor centre, and the sympathetic system, supplies a sufficient explanation of the occurrence of albuminuria without kidney disease in cases which cannot be classed as instances of "physiological albuminuria," or described under either of the special heads already suggested, such as "the albuminuria of puberty," "the albuminuria of adolescence," &c. The author then directed attention to two not generally recognised classes or groups of cases in which albumen frequently occurs in the urine without organic disease. First, cases of young men in whom the genito-spinal centre has been debilitated and rendered preternaturally excitable not necessarily by sexual excess, but by the struggle to repress and restrain the passions, a mental and nerve-centre excitement. The second class of cases were those of studious or sedentary men of middle age who suffer from mental depression and "nervousness," with, perhaps, either agoraphobia or claustrophobia, or both. In these cases albumen is often found in the urine, and, in some instances, its appearance alternates with that of sugar in small quantities, pointing significantly to the location of the excitement, or the glance of the reflex, and suggesting the fact of nerve centre disturbance as the cause of the malady.

Dr. MAHOMED pointed out the inability of physiologists to produce variations of arterial pressure by retarding or accelerating the capillary circulation throughout the body, and suggested that investigations into the variations of the tension and the rapidity of the interchange of the gases in the blood and tissues were urgently needed. He criticised the theory propounded by Professor Hamilton, that the increase of arterial pressure was due to the diminished specific gravity of the serum, and pointed out that the specific gravity of the serum was not usually decreased to any considerable extent in Bright's disease, quoting the observations of Quincke in support of this; he stated that reduction of the specific gravity had only been observed in cases of long-standing, and was probably very gradually produced; while to account for the increase of pressure in Bright's disease it was necessary that the alterations in the specific gravity should be very rapid, that they should be produced in a few hours; a belief in such a rapid change of gravity was contradicted by all previous physiological experiments on the subject. The rapidity of the circulation of blood in the normal Malpighian glomerules was dwelt upon. Conclusions were drawn from well-ascertained facts that *retardation of the glomerular circulation*, combined with increased pressure in and distension of the glomerular vessels, were the chief factors in the causation of albuminuria. It was pointed out that while water might readily transude from the glomerules under normal pressure and rapidity of blood flow, albumen, being less diffusible, would probably be retained, but that slight delay and increased turgescence of the glomerules might permit of the exudation of paraglobulin and other more diffusible forms of albumen before the appearance of serum albumen. The immediate causes of albuminuria were classified as follows:—1. Increased glomerular pressure and slowing of the blood flow in the glomerules. (*a*) From general increase of the arterial pressure with local hyperæmia of the kidney, due to disorder of the other excretory organs, especially the skin and bowels. This may occur as a functional condition. (*b*) From general increase of the arterial pressure with increased distension of the glomerules owing to obstruction of the tubular plexus of capillaries; produced either by distension of the tubules by their epithelial contents or by compression of tubular plexus by fibroid growth. (*c*) From increase of arterial pressure in the kidney due to derangement of the nervous system, either general, local, or reflex. 2. From alteration in the tissue of the bloodvessels, tube walls, and epithelium, produced by acute inflammation or infarction. 3. From the presence of abnormal forms of albumen in the blood serum. It was stated that a large number of forms of albumen were found in the urine, that they were very unstable bodies, and were constantly undergoing change, that consequently heat and nitric acid failed to detect many of them. For these and other reasons the use of such tests as the brine test, picric acid and potassic-mercuric iodide was advocated. It was stated that they were good *negative* tests. It was shown that many cases occurred in which albumen detected by nitric acid and heat alternated with a form of albumen only recognised by the more delicate tests, especially brine and picric acid. Dr. Mahomed said that he had found albumen in the urine of nine out of fifty-eight persons (i.e., in 15·5 per cent.) thought to be healthy. Details of the cases in which albumen was found were reported, and it was shown that seven out of the nine cases were clearly not in perfect health, and it was suggested that many such cases were produced by temporary functional disturbance. Albuminurias were divided for diagnostic purposes into several groups. 1. Cases of fully developed Bright's disease. 2. Cases with cardio-vascular symptoms and changes of Bright's disease, but with only slight and occasional albuminuria. 3. Cases in which the albuminuria was considerable and prolonged. These were subdivided into: (*a*) Those with no other symptoms of Bright's disease, the arterial pressure not being increased, the quantity of albumen being small. Prognosis good. (*b*) Those without increase of arterial pressure, the quantity of albumen being large. Prognosis hopeful. (*c*) Cases in which the albuminuria is persistent and is associated with increased arterial pressure. Prognosis grave, but never hopeless. 4. Cases of temporary and intermitting albuminuria associated with anæmia, debility, nervous depression, or some other condition which could often be easily recognised. It was pointed out that Bright's disease had two different aspects, the renal and the cardio-vascular; albuminuria affords evidence of the one, high arterial pressure of the other, and that either of these might be present for many years without producing grave symptoms, or giving rise to any anxiety. If both albuminuria and high arterial pressure be present the cause for anxiety is greatly increased. In conclusion, Dr. Mahomed stated his views concerning Bright's disease briefly as follows:—The first step is the existence of an acute or chronic form of blood-poisoning, either due to some definite poison, such as scarlatina, alcohol, or lead, or to the blood being laden with excrementitious matters, as in gout or pregnancy. This produces two results: a rise of blood pressure from impeded capillary circulation throughout the body, and a more or less severe functional hyperæmia of the kidney, the chief excretory organ of the body. Chill, constipation, or an excessive dose of the poison may now determine an

acute inflammation of the kidney, and the structural changes may produce albuminuria by obstructing the circulation through the tubular plexus, &c. If no inflammation takes place, and the condition remains chronic, albuminuria may be only occasionally present, and that in small amount; but the cardio-vascular changes ensue as the result of prolonged high arterial pressure. The subsequent renal symptoms will depend on the situation and extent of the change in the kidney.

Dr. JAMES FINLAYSON said it was well known that many organic and mineral poisons had the power of causing the appearance of albumen in the urine. Cantharides when taken into the system might be regarded as producing a somewhat acute albuminuria, whereas lead sets up a more chronic variety. It was well known that many specific fevers were associated with the presence of albuminuria, which was probably to be explained by the action of the poisonous material circulating in the blood. In cases of pneumonia, which was closely allied in many respects to the specific fevers, albumen was frequently discovered in the urine. Referring to the albuminuria of pregnancy, he thought that it was not altogether to be explained by the effects of pressure, as it was often found in the early stages when these could not be present; and he supported this idea by the fact that in some cases where the fœtus had died in utero the albumen had entirely disappeared from the urine. He referred to lead as one of the causes of disease of the kidney, the lesions of which were closely allied to those occurring in gouty subjects. But while both of those forms of disease had been demonstrated to be common in London practice, they were almost entirely unknown amongst the patients met with in hospital practice in Glasgow. The bacillus aside for the moment, he recognised the fact that there were many points of resemblance between tuberculosis and the specific fevers, and regarded the pathology of albuminuria in tubercular subjects as being probably capable of a similar explanation as that occurring in febrile affections. The facts adduced seemed to support the toxic view of their origin.

CHESTER NATURAL SCIENCE SOCIETY.

Contamination of Milk.

A MEETING of the Microscopical Section of this Society was recently held, Dr. Stolterfoth in the chair.

Mr. J. D. SIDDALL brought forward some observations he had made on impurities in milk.—The CHAIRMAN gave a brief, lucid description of the microscopical constitution of milk, and then called upon Mr. Siddall, who said that some time ago the city analyst brought to him something in a little bottle with the request that he would examine it microscopically—that it was the sediment of some milk that had been sent to him for analysis. A family had all, or most of the members of it, had a severe attack of diarrhœa, and suspicion had fallen on the milk; that he had examined the milk chemically, and so far it was all right, but he would like Mr. Siddall to examine the sediment microscopically. This he did, and found it to consist chiefly of vegetable matter, with some little yellow bodies in it, which puzzled him at first; he then examined the sediment of the milk supplied to his own house, and found the same materials. He then examined some cow's dung (fresh), and found exactly the same partially disintegrated vegetable matters and the same yellow fungoid matters. After this several other specimens of milk were examined, and the sediment was in every case found to be the same, showing that this sediment consisted of cow's dung. Mr. Siddall then wrote a letter to one of the local papers, and although it did not appear to attract much attention, yet he tested many specimens of milk sent, and in every case he found the same objectionable matters. A prominent member of the local farmers' club called upon him and complained, saying, among other things, that it was impossible to avoid a little such contamination, but that a little cow's dung could do nobody any harm, as it was a very valuable medicine. Mr. Siddall went on to say that surely, if necessary, means might be taken to avoid such contamination. He exhibited, under the microscope, the sediment—cow's dung and milk globules.—Mr. SHEPHERD confirmed what Mr. Siddall had said, and said that since he had complained to his milk supplier the sediment had been very perceptibly diminished.

SANITARY ASSURANCE.

LONDON SANITARY PROTECTION ASSOCIATION.

THE third annual general meeting of this Association was held on February 23rd, at the offices, 1, Adam-street, Adelphi. In the unavoidable absence of the Duke of Argyll, the chair was taken by the senior vice-president, Mr. Hugh Leonard, M.Inst.C.E., who read the report of the Council and moved its adoption. The report stated that the membership on December 31st, 1883, had reached 723, including Eton College and all the boarding-houses there, the governing body being reckoned as one member only. During the year the engineers had inspected 404 houses for the first time, the majority of them being in London, making a total of 927 houses inspected and reported upon by the engineers of the Association in the three years of its existence, most of them three or four times.

Mr. Timothy Holmes, M.A., F.R.C.S., the honorary treasurer, in presenting his balance sheet and report said that it showed a gross income of £1543 and an expenditure of £1279, leaving a balance of £264, against which there were outstanding accounts amounting to £114, leaving a net balance of £150 to be carried forward. This encouraged the Council to engage a fourth engineer, so that in 1884, in addition to the three gentlemen whose names were in the prospectus, they should have the services of Mr. Alexander Kyet, who came with the highest possible character as a sanitary engineer. Although they commenced the year with £150 in hand, he thought it would be wrong to regard this balance in any other light than as an insurance fund against the contingency of a temporary diminution of business.

Mr. Forde, M.Inst.C.E., Mr. Robins, F.S.A., F.R.I.B.A., and Mr. William Shaen, solicitor, having addressed the meeting upon the report, Dr. Whitelegge, the executive officer of the Mansion House Council on the Dwellings of the Poor, asked how far that Association was willing to assist the Mansion House Council in the work they had undertaken. Dr. Bristowe, F.R.S., a member of Council, said that as a medical officer of health he deprecated the idea of the Association setting itself in opposition to any body of men such as the parish authorities, or mixing itself up in any contentious business which was likely to lead to litigation, and Mr. Holmes, the treasurer, having spoken to the same effect, the chairman replied that the matter would be taken into the careful consideration of the Standing Committee of the Council, and an answer would be sent to Dr. Whitelegge.

The adoption of the report having been carried unanimously, the formal business of the election of president and Council for 1884 was then proceeded with, and the whole of the out-going Council were declared to be re-elected, with the addition to their number of General Lord Chelmsford, G.C.B., with his Grace the Duke of Argyll as President.

SANITARY ASSURANCE ASSOCIATION.

The third annual meeting of this Association was held at the offices of the Association, Argyll-place, on Feb. 25th, Dr. Geo. Danford Thomas in the chair.

Mr. Joseph Hadley, the secretary, read the annual report and balance sheet for the year 1883, in which the Council explain that after the experience of three years they have made such alterations in the details of their work as have enabled them to reduce the charges both for houses in London and in the country. In London the minimum fee for inspection and report is now one guinea, and the maximum six guineas. The maximum fee for country houses is also six guineas, with travelling expenses extra. In every case of property placed on the Assurance Register for the first time the sanitary arrangements have been found to be more or less defective; but the annual inspections have shown that houses certified by the Association have remained in perfect sanitary condition. A special committee had been appointed to consider whether a measure should not be introduced into Parliament for "compelling builders of all new dwellings to obtain a certificate from some authority or qualified person as to the sanitary condition of such dwellings before it shall be lawful for them to be inhabited." Dr. James Stevenson, medical officer of health for Paddington, has succeeded Prof. Corfield as medical officer to the Association. The chairman said that after carrying on the Association for three years, the Council were satisfied with the result, especially with regard to the granting of sanitary certificates which they had initiated in 1880.

THE LANCET.

LONDON: SATURDAY, MARCH 1, 1884.

AT the close of the discussion at the Medical Society there was a general feeling that the antipyretic treatment of typhoid fever had gained the day. And the success of the advocates of this method of treatment appeared complete not only along the advanced statistical line, but also amongst the rank and file of individual experience. The brilliant array of statistics adduced by Dr. CAYLEY, the substantial statistical evidence and still more conclusive personal experience of Dr. COUPLAND, together with the vigorous though brief onslaught by Dr. BROADBENT, formed a trinity in unity of force which no amount of judicious scepticism was able to withstand. It must be confessed that the speech of Dr. BRISTOWE produced a marked effect upon his audience—an effect altogether disproportionate to the value of the matter with which his hearers were treated. Dr. BRISTOWE seems to have been moved to reject the cold bath in typhoid fever mainly because he had seen two examples of marked collapse of the lungs follow the use of it. We think his mental attitude after the first case far better than his resolution after the second autopsy. In the former he did not condemn the cold bath on account of the collapse of lungs, but bided his time; and when, having suspended his decision, he again found the slate-coloured, airless organs, he at first concluded that the cold bath was not answerable for the mischief. But to his surprise, it turned out that the patient *had* been submitted to one ill-timed plunge, and Dr. BRISTOWE forthwith *practically* concluded that the cold bath could produce an alarming condition of lung. Two cases, however, ought not to be sufficient to move a philosopher to action, even though that action be a retreat from a method of treatment.

But it certainly behoves the thoughtful mind to take into serious consideration the nature of the evidence on which so distinct a success was scored as that which Dr. COUPLAND'S paper initiated. It is a point of cardinal importance first of all to determine the value of statistics in dealing with the question. Dr. BRISTOWE was not to be convinced by the flourishing of yards of statistical tables before his mental vision. Now, what are the objections to statistics as means of deciding questions of this sort? The main arguments against their conclusiveness lie on the surface. The difficulties of diagnosis, inaccuracy of observation (not necessarily from want of skill or opportunity), the possible acceptance of secondhand or even more remote evidence, the smallness of numbers, the variability of disease, the idiosyncrasy of patients and the general mixture of effects, are some of the objections which most readily assail us. In dealing with a question where such complex and varying conditions meet in one confused whole, no wonder that the logical mind falls back and refuses to have anything to do with so disorderly an assemblage. But if that be the case for the opponents of the cold bath, what answer can its advocates supply? Dr. CAYLEY believed that, if the numbers were sufficiently great, and collected over an extended period of time, a comparison of like cases would remove much of the difficulty of admitting statistical evidence. But then there is a stern necessity for accurate observation, and for making sure that the cases compared are really similar; and, to say the truth, nothing can be more difficult than to secure these conditions.

Now, with regard to the value of individual experience. It is maintained by the supporters of the antipyretic treatment that lives are saved, that comfort and refreshment are given to the patient, and that no evil effects ensue on the employment of the treatment. The opposition contends that the treatment is needless in the majority of cases, and is distinctly dangerous in many instances, either by its tendency to produce internal inflammations or by increasing the liability to perforation and hæmorrhage. Now, as Dr. COUPLAND urged, a little experience is worth all the *a priori* reasoning in the world. And what does experience teach, or appear to teach?—for we must remember that a margin for fallacy everywhere exists. In the experience of Drs. BROADBENT, CAYLEY, COUPLAND, MAHOMED, and SANSOM—we mention these gentlemen as having taken part in the recent discussion—no evil consequences have ever ensued on the employment of the cold remedy. Dr. MACLAGAN argued that the application of cold to the surface drives blood towards the internal viscera, and so increases the liability to intestinal perforation and hæmorrhage. But Dr. SANSOM attempted to show that there were many other reservoirs for blood than the innermost organs. No doubt, Dr. MACLAGAN'S mechanical physiology may seem rather crude; but in the present state of physiological knowledge we do not think any definite assertions can be made on the matter. An intelligent retrospect of Dr. COUPLAND'S figures shows that the increase in the death-rate from perforation and hæmorrhage after the use of the cold bath is only apparent. From what has been advanced so far it will be gathered that in the discussion of the subject almost nothing has been said of the *rationale* of the treatment. BRAND believed that cold could starve the process of fever just as it is capable of slowing or moderating a process of fermentation. However inclined one might be to accept so simple and enticing a view, we think it would be wiser to wait till something more certain is known of the nature of the process of typhoid fever, as well as of the actions of protoplasm under different degrees of temperature. After all, the problem with which we have to do has no relationship whatever with the mode of action of the cold bath. The question is simply this: Is the antipyretic treatment of typhoid fever good or bad? No doubt this question is really a plurality of problems, but it is one which *experience* only can determine.

Let it be clearly understood that antipyretic treatment means the employment in the majority of febrile cases of the best measures for reducing the temperature when it reaches a certain height, and for the continuous and steady adoption of those measures, and we think every unbiased mind must conclude that, at least for the present, a well-earned victory may be claimed by the advocates of the cold bath treatment of typhoid fever.

WE commented on the 16th ult. on the historical portion of the recently published Report of the Metropolitan Sewage Discharge Commission. The correct conclusion in regard to

this part of the subject is undoubtedly that reached by the Commissioners—namely, that the drainage works of London carried out by the Metropolitan Board of Works, under the powers of the Act of 1858, were well executed, but were too small for the requirements of the metropolis; and that the throwing of the sewage into the Thames at the present outfalls could only, at the best, be justified as a temporary expedient, and on the implied condition that it should, in some way or other, be disinfected. It has never been pretended that the sewers are sufficient for the removal of storm water. There are, it appears, no fewer than forty-eight storm outlets in the metropolitan area from which storm water, mixed with varying quantities of sewage and often exceedingly foul, is poured into the Thames in the heart of London; and more are now required. Then, again, it is admitted by the Board that the storage reservoirs from which the sewage flows into the river at Barking and Crossness are too small. Instead of the sewage being thrown out only during the first two or two and a half hours of the ebb, it is often discharged during the whole of the ebb, and sometimes, as we ourselves have observed, during a portion of the flood tide. The Board proposes to overcome this difficulty by increasing the size of the storage reservoirs, but in that case the torrent poured out at high water would evidently be greater while it lasted.

One of the most important facts proved before the Commission was that sewage thrown into such a river as the Thames, in the tidal portion, is constantly liable to be carried much above the outfalls. Elaborate float experiments have settled this beyond a doubt; and it has been further illustrated by chlorine determinations showing the wide diffusion of the sea water, which can sometimes be traced "almost up to the tidal limit at Teddington." This startling fact is caused mainly by the tides, the greatest upward flow occurring when spring tides succeed to neap; but also to a peculiar mixing action, which produces a much greater effect than had previously been supposed. As to the floats, it will be enough to say that one float, started from Barking three hours after high water, travelled upwards for twenty miles—that is, to between Putney and Hammersmith; and that another, started at high water, was actually carried up to Greenwich, about eight miles above the outfall! It is, then, evident that the whole tidal portion of the Thames, from Teddington down to the region where it practically becomes sea-water, is polluted with the sewage of London, not only from the storm overflows, but also from the sewage outfalls themselves. In the greater part of the river this sewage pollution is, under ordinary conditions, hardly perceptible, except by analysis, although there can be no doubt that the character of the river mud is affected by it. But in the region which may be roughly described as lying between Greenwich and Greenhithe an excessive pollution exists at all times of the tide. It is in regard to this sewage area that the loudest complaints are made. We must now consider, with the Commissioners, what evils can be traced to the sewage pollution.

In the first place we must remark on what is sometimes called a sentimental, but which appears to us a very real, grievance. The Thames is not merely a commercial highway. It is to many thousands a pleasure-resort, and we hold that even if it were proved that no smell and no injury to health arose from its water, the mere knowledge of the filthy pollution to which it is exposed would spoil the pleasure of those who travel on it. Thousands row and sail upon it now, but thousands more who love the water, and who would be benefited by the fresh air and healthy exercise of boat life, are deterred by the thought of what the water holds. They would as soon think of rowing on an open sewer. But it is now certain that, as we have always maintained, actual nuisance and real mischief are occasioned by the sewage pollution.

The Commissioners, after hearing a mass of evidence on both sides, popular as well as scientific, and after a full discussion of all the points raised by the witnesses for the Board, have adopted conclusions which must, we believe, prove fatal to the present system. Taking these conclusions in the order in which they appear in the report, we find, as might have been expected, that but little injury to health can at the present time be proved. Abundance of evidence was forthcoming in regard to the slighter ailments, such as diarrhœa, faintness, and vomiting, but none that could be considered sufficient in regard to the death-rate. Our readers know well how difficult it is to obtain proof in such an inquiry. We are inclined to believe that more illness is due to this cause than can be proved, and certainly endorse to the full the remark of the Commissioners that the sewage-polluted water "constitutes a danger to public health which demands attention, more especially as the evil must increase with the growth of the population."

The next point dealt with by the Commissioners is the general nuisance and inconvenience arising from the sewage pollution. The average discharge is said to be eleven millions and a half of cubic feet of concentrated sewage in each ebb tide. A great mass of trustworthy evidence showed that this enormous pollution leads in warm weather to a foul smell, both from the water and the mud, throughout the sewage area. All will agree that it would be wonderful if it did not. The popular evidence upon this point was justly regarded by the Commissioners as more important than the scientific, but the latter had its value, and is, we think, somewhat underrated in the report. A consideration of the chemical changes which are constantly taking place in the sewage area shows that a foul odour must be evolved at times before the process of natural oxidation, by which at length the sewage is destroyed, is completed. The sewage as it enters the river contains much putrescent, but also much recent fæcal, matter. The putrescent matter is most easily oxidised, and soon absorbs all the dissolved oxygen of the river—absorbs it, indeed, as fast as it is taken from the air. The quantity of dissolved oxygen in the water of the Thames between Greenwich and Greenhithe is practically *nil*, even at high water. The unputrefied, and particularly the solid portion of the sewage, washes up and down the river until it also putrefies and undergoes oxidation. Even at high water a considerable quantity of nitrogenous organic matter is found in suspension in the water. Now, in summer, when putrefaction is rapid, the absorption of oxygen from the air is by no means rapid enough to prevent the evolution of the foul products of putrefaction. Some of these escape into the air, and produce what is known throughout the district as the "smell of the river." The insufficiency of the oxygen to

destroy the fæcal matter in the sewage area is shown not only by the large pollution left at the end of the flood tide, but also by the reduction of nitrates, an operation which, as Dr. ANGUS SMITH has shown, is easily effected by excess of sewage. In winter, when putrefaction is slow, no appreciable smell is emitted by the water, doubtless because the fæcal matter is distributed over a larger area before its final putrefaction and oxidation. The scientific witnesses for the Board contend that the absence of fish in the lower Thames is due to the absence of oxygen, and in this we think they are in the main correct.

No evidence was offered that injury to navigation arose from the suspended matter of the sewage. We believe that the allegations on this score have been greatly exaggerated, but as, according to Dr. FRANKLAND, three and a quarter millions of tons of mud are contributed every year by the sewage, some effect must be produced by it. And there is abundant evidence to show that the quality of the mud is most seriously affected by the pollution. The mud is greasy and excessively foul, and in hot weather emits a disgusting stench.

In conclusion, we have only to hope that the future labours of the Commissioners will be as satisfactory as the past, and that they will succeed in framing recommendations which shall justify Parliament in putting a stop to a nuisance which is nothing short of a national disgrace.

THE "velocity of the pulse wave" has been the subject of investigation by many continental physiologists, and the general result of their experiments has been to show that the speed with which it travels is about 20 feet per second; and it is further known that the rapidity of its progress is essentially dependent upon the rigidity of the tubes through which it travels—so that, for example, it is swifter in the lower extremity than in the upper, owing to the greater firmness of the walls of the femoral as compared with the axillary arteries and their continuations. But little has been done to determine the effects of other conditions modifying the speed of the pulse wave. This hiatus has recently, however, been in part filled by the publication of an important series of experiments on pulse wave velocity by Dr. A. T. KEYT, of Cincinnati, who has employed an instrument which possesses this advantage over that devised by MAREY, that the tubes by which the simultaneous inscriptions are conducted are filled with air instead of water. He first set himself to determine the precise influence of tubes of different degrees of stiffness or elasticity on the velocity of the liquid waves sent along their interior, and selected for this purpose, first a glass tube, then rubber tubes of varying strength and firmness of wall, then tubes made of chicken-gut, and finally the aorta of a calf. These experiments demonstrated that the velocity of liquid waves in elastic tubes is proportional directly to the stiffness and inversely to the elasticity of the tube traversed; and, as bearing on the rate of pulse propagation in living arteries, they indicate the important modifying influence which the state of the arterial walls as to stiffness or elasticity must exert upon the same, for whilst with a glass tube 3-16ths of an inch bore and 6 feet in length the wave velocity was 216 feet per second; with firm rubber tube it was 165 feet; with a softer and more yielding tube of the same bore and length it was 72 feet; with a still thinner tube, 51 feet; with a similar soft tube steeped in gasoline, and thus rendered still more supple, 31 feet; with a tube made of rubber cloth, 28 feet; with chicken-gut, 16 feet; and with a calf's aorta, 12·75 feet. A second series of experiments were made to determine whether the velocity of liquid waves in the interior of elastic tubes is modified by the mode of impulsion, and it was somewhat unexpectedly found that the rate of pulse propagation is not modified directly by the manner of the heart's action, whether it beats quickly, launching a sharp wave, or slowly, sending a sloping wave. In either case the pulse wave velocity along the arteries is alike. A further successive series of experiments showed that, other things being equal, the pulse wave travels more slowly along large, and faster along small, arteries; also that mere distance from the heart neither accelerates nor retards the velocity of the beginnings of pulse waves, whilst the modifying influence of different pressures is small at most, and requires for development considerable difference of pressure in tubes very soft and elastic. All the experiments hitherto noted were made with the fluid in the tubes at rest, except in so far as a certain quantity was injected into the tube at each impulsion of the pump. But it seemed important to determine whether any change was effected in the rapidity of the pulse wave when the fluid was moving more or less rapidly; and by making a slight change in the arrangement of the apparatus it was ascertained that liquid waves travel along elastic tubes with the same speed, whether the liquid be at rest or freely flowing. Hence Dr. KEYT concludes that, whether the blood in the arteries flows fast or slow, the velocity of the pulse wave is not affected. The effects of branching of the tube appeared to be negative, and the consistence of the fluid seemed also to make no difference in the velocity of the wave, a result that would certainly not have been anticipated. It was found, for example, that the wave was not propagated with greater rapidity in water than in a solution of starch as thick as would flow through the tubes; hence, whether the blood be dense or watery, the pulse wave velocity is identical. Great obstruction of the tube was found to delay the propagation of the wave, the delay occurring at the point of obstruction, and is not caused by lessening of the rate of transmission below. Lastly, the distal wave is delayed by communication with an elastic pouch more easily distensible than the tube, whilst, if pouch and tube are nearly equally yielding, there is no increased delay. We have not space to follow Dr. KEYT in his observations on pulse wave velocity in the living subject, nor on the pre-sphygmic interval, but desire to recommend his essay to all those who are engaged in the study of physiology, as containing many facts and suggestions which have an important bearing on the study of the pulse in health and disease.

THE correspondence recently published in our columns respecting the sanitary condition of Wellington College and its surroundings has opened a question of very grave importance. There are few subjects deserving of more serious consideration in connexion with the choice of a school than its probable influence upon the health of the pupil, and we fear that too often this does not receive the attention it deserves. If the scholastic arrangements are satisfactory but little

enquiry is made into the sanitary conditions, and the consequence of this neglect is not discovered till some serious mischief has been done. The health conditions of schools have of late years received much more attention than formerly, but we believe that they are still, in many instances, far from what they ought to be, and that their importance is not sufficiently appreciated by the governing bodies or by the school authorities. Our readers may remember that the subject of the health of the boys at Wellington College was first brought to public notice in a letter written by Mr. BARFORD, the late medical officer of the College, to the vice-president of the governing body, in which he called attention to the great prevalence of sore-throat, often assuming a diphtheritic form, and of acute lung disease. This condition he attributed chiefly to malaria arising from the want of subsoil drainage of the grounds surrounding the College, and he backed up this opinion by the authority of Sir WILLIAM GULL. His conclusions were called in question by Mr. BALDWIN LATHAM, the civil engineer employed by the College, who attributed the unsatisfactory state of health of the boys to the insanitary condition into which the College and masters' houses had been allowed to fall, and which he believes he has succeeded in remedying by carrying out a complete system of house drainage and works for the deodorisation of the sewage, with a system for providing an adequate and improved supply of water. Mr. BARFORD'S statements and views received strong confirmation from Dr. HOOD, Mr. LLOYD-ROBERTS, and Mr. DENNY, while the only support given to Mr. LATHAM'S was by Mr. ARMSTRONG, the present medical officer, in a letter which contained not a single fact controverting Mr. BARFORD'S statements. From a careful study of the correspondence we have come to the conclusion that probably both of the above-mentioned causes operated to produce the unhealthy condition of the school, but the facts adduced by Mr. BARFORD appear to make out a strong case for inquiry into the matter—an inquiry which should be conducted by duly qualified experts, who have no personal interest in the results. That some such course should be adopted by the governors we have no doubt, as the suspicions cast upon the sanitary condition of the College cannot fail to affect it very seriously by deterring parents from sending their boys to it while so vital a question remains in doubt.

Another important point appears to us to rise out of this correspondence. Mr. LATHAM, as we have already said, states that the College and masters' houses had been allowed to fall into such an insanitary condition as would, in his opinion, account for all the illness among the boys, and he seems to imply that for this state of affairs Mr. BARFORD, as medical officer of the College, must be held responsible. But Mr. BARFORD states that since the masters' houses were built he has never ceased to express dissatisfaction at their insanitary arrangements, and that he made a number of recommendations respecting the drainage and sewerage which were unheeded. It seems probable that the committee of governors, to whom these recommendations were addressed, were not sufficiently alive to the necessity, from a health point of view, of improving the sanitary condition of the College and houses, and may have been deterred from moving in the matter by the great additional expense which the required measures would necessarily involve. To obviate the consequences of such ignorance, it appears to us that it would be judicious to introduce the medical element into the governing body. Among the retired medical officers of the Army there would probably be no difficulty in finding one or two who would be willing to give their services in this way to such an institution as Wellington College, and who would be very competent to advise their colleagues on all questions affecting the health of the boys. We would strongly recommend the governors, in the interests of the school, to lose no time in having its sanitary condition carefully examined and reported upon by competent independent experts, and to take such measures as would secure to them in future the aid of one or more colleagues competent to judge of, and advise upon, all questions bearing upon the health of the boys.

Annotations.

"Ne quid nimis."

GENERAL MEETING OF THE MEMBERS OF THE ROYAL COLLEGE OF SURGEONS.

AS the General Medical Council will commence its sittings on the 25th of March, and as it is uncertain how many days these will occupy, it has become necessary to change the date for the proposed general meeting of the Fellows and Members of the Royal College of Surgeons of England. The meeting will, it is expected, be held on Monday, March 24th. The President and Vice-Presidents will be prepared to report to the next meeting of the Council, on the 13th inst., the necessary arrangements for the general meeting.

HYGIENE OF SCHOOLS.

WE print elsewhere a letter proposing the formation of a new society of medical officers of schools. Although we are much disposed to think that societies connected with the profession are already almost too numerous considering the demands upon the time of medical men, we believe that such a society, if well organised and carefully worked, would be a valuable addition. In these days of increased education, when almost every public appointment worth holding is obtained after competitive examination, there are many points connected with the health both of teachers and scholars which require and deserve careful consideration. The amount of mental work which may be undertaken without injury to health, the conditions under which it should be conducted, the dangers arising from over-pressure, the means best adapted for the preservation of health, mental and bodily, under the enforced conditions of hard work, are still but imperfectly understood. The members of such an association would have abundant opportunities of collecting and reducing to shape valuable information on all these points. But much of the success of the society will depend upon the sound judgment of its founders and upon the lines of inquiry they may see fit to adopt and the relations they may establish with the heads of schools with a view to acquire accurate and useful information on all points connected with the health and management of the pupils. The object is a very desirable one, the field extensive, and the results to be obtained may prove of practical value. We only trust the promoters will not attempt to overdo the thing nor lose sight of the importance of being practical in their aspirations and their work.

THE GENERAL POLICE AND HEALTH BILL FOR SCOTLAND.

FROM mention in the Queen's speech last year this Bill has dropped into some indefinite position in the Government scheme, and so far has this session been little noticed in Parliament. But it is not supposed that the prospects of the Bill have thus been injured; its framers have been busy amending and remodelling sections and clauses in the hope that opposition will be pretty well exhausted before it reaches committee, or even the select committee to which it is now thought the Bill will be relegated for final revision. It is an enormous compilation, extending to over 600 clauses, and, dealing as it does with so many health questions, is of much interest to the profession. Last year, when noticing the Bill, we were able to give it a cordial general support, but the last draft contained a retrograde change on the important question of the notification of infectious diseases, and this we sincerely hope has been again amended. As at first drawn the section placed the responsibility on the shoulders of the householder, and thus gave entire satisfaction to the profession, but latterly practititioners were also called upon to notify. It is expected that the Bill will soon appear on the table of the House; but in the meantime a serious drawback to its progress has occurred in the death of its chief draftsman, ex-Provost Lindsay, of Leith. The very sad event occurred suddenly last week. Mr. Lindsay was the author of the Act of 1862, which this Bill seeks to amend, and had throughout a long official life taken such a keen and intelligent interest in municipal and sanitary reform that the Lord Advocate was fortunate in securing his assistance with the present work. All who have had occasion to interest themselves in Mr. Lindsay's last great labour will readily acknowledge the courtesy and consideration with which he met their views, and will feel deeply the loss which the cause of sanitary reform in Scotland has sustained by his death.

PROTECTION OF MINORS.

THE urgent need of an Act for the Protection of Minors was sufficiently shown by the deputation which waited on the Home Secretary on Feb. 22nd, and the statement of Cardinal Manning, that whilst protection of the property of minors is recognised by law, protection of their persons has no legal existence, is only too true. The trade in juvenile prostitution is far greater than is generally supposed, although we may doubt whether the boast of one woman "that 1200 girls had passed through her hands" be strictly true. Anyone familiar with the subject knows that there has lately been a great increase in this detestable traffic in our large cities, seaports, and garrison towns, and the condition of our own streets is a sufficient proof of the laxity of the law in arresting juvenile prostitution, even when there is no question of procurers and procuresses. Any night or even afternoon will show an inhabitant of this and other large cities an enormous number of young girls, not only under twenty-one years of age, but under sixteen, parading the streets for the sole purpose of prostitution. The deputation referred to the question of brothels and the regulation of the streets as being also of great importance. The first year after the suspension of the Contagious Diseases Acts has witnessed the revival of these questions, and the Home Secretary is obliged to admit that juvenile prostitution is on the increase and forms the one exception in the general decrease of crime. Some figures, which we published in May last, will perhaps most clearly show the deterrent effects of these Acts in the subjected districts:—"In the eight years 1873–80, 1642 girls and women, who had been found in improper places and in bad company in the several districts, returned to their friends on finding that they were under the observation of the special police, before it was certain that they had commenced a career of vice. Of these 194 were under fifteen years of age, 628 were between fifteen and eighteen, and 414 more were under twenty-one. The number of girls and women who discontinued their immoral lives on being cautioned, and who consequently were not registered, shows a similar satisfactory result. The total number is 1407 in eight years, of whom 33 were under fifteen, 284 between fifteen and eighteen, and 408 under twenty-one years of age." Can the value of these Acts as a deterrent to juvenile vice be more conclusively shown? for it must be remembered that not one of these girls came on the register or was compulsorily examined. The rescue and reclamation of the fallen, and the improvements in social order and decency, which took place side by side with the action of the compulsory clauses, have been practically suspended with them, and we are now beginning to reap the result. The Bill for the Protection of Minors introduced last year may do some little good, but, meanwhile, it has to pass, and we can see no reason to suppose that it will quickly do so and come into speedy effect. Moreover, we are quite sure that its operation will only produce an infinitesimal benefit so far as the repression of juvenile prostitution is concerned, in comparison with the warnings of the special police who were entrusted with the administration of the Contagious Diseases Acts. It was a rash and most unwise proceeding to suspend these Acts and provide no remedy against the disastrous results which everyone might have foreseen would be an early consequence of their suspension. The subjected districts are rapidly relapsing into their old condition, which was a disgrace to any country laying claim to civilisation.

SALE OF POISONS.

IT is amusing to note the occasional explosions of that fussy energy with which the authorities are animated in regard to the sale of poisons. When a conviction occurs, instructions are issued to the police to enforce the law. After a few weeks, as soon as the last case of poisoning is forgotten, either these "instructions" are withdrawn, or they are treated as a dead letter. The recent conviction at Liverpool has, as usual, produced a special order to the local police. They are actually about to prevent the sale of fly-papers, because some one has found "two grains of white arsenic in one" of these sheets. How long will this state of things continue? When will the need of a steady and calm prevention of the indiscriminate sale of poisons be recognised? We fancy not yet. Meanwhile the sort of activity which simply draws attention to danger, instead of removing it, and suggests new facilities for poisoning instead of diminishing the already large number of those which are only too well understood, is not to be applauded but to be deprecated. It is bad in itself, and injurious in its effects and consequences.

GYMNASTICS FOR GIRLS.

SHOULD girls practise gymnastics? If so, to what extent and in what way? We readily answer the first part of the question in the affirmative. To answer the second, it is necessary first to consider in what, fundamentally, the value of gymnastic exercise consists. All such practice, we take it, exists in response to a need which is felt, whether it can be described or not—a need of muscular tissue for work as its function, a need as real as that of nutrition, with which it is intimately associated. On nourishment, and on the due indulgence of this unnamed appetite for work, development depends. It is clear, then, that exercises which will duly, not unduly, tax the female frame are desirable. Putting the shot or throwing the hammer, for instance, as now conducted, are out of the question. On the other hand,

dumb-bell practice, or that with Indian clubs, has certain marked advantages, especially as regards the training of the muscles of the upper half of the body. They are invaluable aids to fine deportment. But we cannot see why a recent critic should prescribe the use of the former *ad libitum*, while he would have "no parallel bars exercise, no trapeze, no horizontal bar, or ladder exercise." An ideal gymnasium should rather include a variety of methods, the one to assist or correct the action of the other. What is above all necessary is that feminine, and even masculine, performers, should aim at what is *due* to their muscles, and should tax them not for labour nor for rivalry, but for healthful recreation. It is also necessary, of course, that any physical deformity or weakness which interferes with the pleasure of gymnastic exercise should suffice to greatly limit it, or even to forbid it entirely.

ANOTHER CASE OF ARSENICAL POISONING.

ON Tuesday, Feb. 19th, the wife of William Lefley was committed for trial by the Boston county magistrates, and also on the coroner's warrant, for having poisoned her husband (aged sixty) by administering white arsenic in a rice pudding. There can be no doubt that the death of Lefley did not arise from natural causes. Dr. Stevenson's analysis showed that the vomit, stomach, intestines, and liver all contained arsenic; whilst in the uneaten portion of a rice pudding of which the deceased had partaken there was "enough to poison fifty people." The remaining portions of some sugar and rice from which the pudding had been made were free from arsenic, proving that, unless the latter had been previously mixed with the milk, it must have been added at the time of making the pudding, or at any rate before the creed had formed, as a cake of arsenic was found in the bottom of the dish, in addition to that contained in "every part of the pudding." Mrs. Lefley admitted having put the sugar and rice in the dish before going to Boston (she and her husband resided at Wrangle), but she denied all knowledge as to how the arsenic got into the pudding. There was no evidence whatever that the poisoning was accidental. Practically, the jury at the assizes will have to decide between suicide and homicide. A verdict of homicide would of course entail the question, By whom was the poison given? Pending the trial we defer further comment, beyond recording our admiration of the lucid and exhaustive summing up of the coroner (Mr. Clegg), who, by the way, is a medical man.

FISH-DISEASE IN INDIA.

AN official report upon a fish-worm epidemic at Madras has been made by Deputy Surgeon-General Furnell in which a large number of parasites are described as occurring in fish, but of which only five—viz., the fasciola hepatica, distoma crassum, and distoma sinense, among the trematodes, the eustrongylus gigas and ascaris lumbricoides amongst nematodes—are also to be found in man. The last-named worm is very common in India, especially on the sea-board, and its prevalence is attributed to the habit of the lower classes of cleaning fish near their wells and water supplies. The other common human parasites in India—viz., the guinea-worm, tapeworm, and filaria sanguinis hominis—do not occur in fish; whilst the bothriocephalus latus, which is commonly attributable to fish, is not met with in India. Dr. Furnell concludes his report by pointing out that the reason why the entozoa are not more frequently transferred to mankind, especially when, as in India, fish-eating is so common, may be explained by the fact that many of the parasites occur in the viscera of the fish, which are not consumed, and that cooking destroys the parasites, and perhaps because the piscine parasites "do not find man a congenial territory for their existence."

BLINDFOLD CHESS AND DRAUGHTS.

IN THE LANCET of Nov. 24th, 1883, will be found some remarks concerning the blindfold play of Mr. Blackburne, the celebrated chess-player. A correspondent who has recently tried conclusions with Mr. Strickland of Leeds, the champion blindfold draughts player, directs attention to the points of contrast between the methods of these masters. Mr. Strickland, during a lengthened tour in Scotland, competed several times a week with the six best players who could be brought together in the respective localities visited. In scarcely any case did he lose a game, and during his last seven public appearances he was not beaten by any of his forty-two rivals. At any period in the contest he will mention the position of every man on either or all of the boards, go over, either as played or backwards, the moves which have led up to the position, and at the conclusion will rapidly and correctly repeat the whole play, again either backwards or forwards. It is a peculiar feature in his success that he plays better when blindfolded than in ordinary cross-board matches, and one of his published blindfold games won at Greenock indicates a mastery of the board marvellous under the circumstances. In contrast with Mr. Blackburne, the draughts player has a distinct mental picture of the boards, and, unlike the player of the royal game, is not put out by irregular play. This faculty of remembering the moves of the greatest bungler alike with those of so-called book-games is very remarkable, especially as our correspondent could find nothing noteworthy in the man, except this development of mere memory. After a blindfold contest the player appears exhausted, his play deteriorates across board, and frequently he is unable to obtain sleep. So severe, indeed, was the mental strain during these weeks in Scotland that the player became irritable and exhausted, and his tour came to an abrupt close on this account. This is also in contrast to the chess champion; but might be expected from the inferior physique of Strickland, whose appearance and voice indicate former illness. The Leeds player has simply through diligent study attained such skill as would appear to the public phenomenal and worth paying to witness, and he has scored a wonderful success. It may be mentioned that he is an inveterate smoker, which possibly may partly account for his breakdown at Greenock, and he is all but a total abstainer from alcohol when anticipating a stiff fight.

THE SPREAD OF INFECTION IN BOMBAY.

ON looking through the quarterly reports of the health officer for Bombay we are astonished to find that this important city is without a hospital for infectious diseases, and that Dr. Davidson has so far urged its provision without effect. We have so many of these hospitals in this country now, and their utility has been shown to be so great in preventing the spread of infection, whether in large boroughs, small country towns, or in rural districts, that the absence of such an institution in one of the first cities of our Indian empire, and one in which "fevers" and cholera form such an important element of the mortality statistics, comes upon us with a sense of surprise. We should strongly advise the municipality to procure the Medical Officer's Supplement to the Tenth Annual Report of the Local Government Board of England, which contains an account of some seventy such hospitals in England, with details as to their construction, management, finances, &c., together with a description of their success in the prevention of epidemics; and then to apply the knowledge and experience there put together to the circumstances of an Eastern city, and to provide for Bombay that which must now be regarded as one of the most important of the sanitary defences which every populous district, in whatever part of the world, should possess.

COMPULSORY ISOLATION.

IT has been decided for some time past to provide the borough of South Shields with a new hospital for infectious diseases, and the building operations may shortly be expected to be completed. The former hospital has done some good work, but recently its usefulness has been largely limited to one disease—namely, small-pox. In 1882 that disease was prevalent, and with a view of being prepared with a knowledge as to what power the sanitary authority had to secure the compulsory removal of patients who were, according to Section 124 of the Public Health Act, 1875, "without proper lodging and accommodation," Dr. Campbell Munro communicated with the Local Government Board as to the proper interpretation of that phrase; and he states that he was informed that it was not considered that that clause gave power for the removal of cases in which the accommodation was sufficient for the treatment of the individual patient, however the facilities for isolation might be lacking. This section has often been the subject of misunderstanding. Occurring, as it does, in an Act which deals with public health rather than the health of individuals, it has by some been most reasonably assumed that the absence of proper lodging and accommodation in the case of a person suffering from a dangerous infectious disease had reference, not so much to the welfare of the individual affected as to the circumstances in which he was placed with regard to the danger of the spread of his disease to the public. Some magistrates have so decided the matter; but lawyers, as a rule, have been inclined to view it in the same light as the Local Government Board, because of certain words which occur in the section itself, and which appear to limit its scope. We should much like to see a case brought before a superior court, because if the section, as now worded, only provides for the comfort and welfare of the individual, some further enactment of a similar sort is clearly needed in the interests of those who are supposed to be protected against infection by the provisions of the Public Health Act.

INSURANCE WITHOUT EXAMINATION.

NO life assurance office ought to insure a life without examining the subject. We know that the practice of dispensing with this precaution prevails. Illustrious and distinguished persons are insured without being examined, and there is no law to prevent the insurance of a life without the knowledge of the person on whose life the insurance is effected. It would probably be difficult to enforce such a law if one existed. If offices choose to gamble—and insurance without examination is, of course, gambling, neither more nor less—they cannot be prevented from doing so. Probably the best plan would be to pass an Act barring all claims made on account of insurances effected after a certain date upon the lives of persons who do not with their own hands countersign the policies in the presence of witnesses. This would exclude insurances on the lives of very young children, and by so doing put an end to a very disastrous facility for fraud and murder.

ZINC IN DRINKING-WATER

IT seems that there is some danger attendant upon the use of galvanised iron water-pipes. Mr. J. Raglan Thomas, the medical officer of health for Llanelly, recently detected zinc in the water supplied through about half a mile of galvanised iron pipe to the village of Cwmfelin. Samples of the water, before and after its passage through the pipe, were sent to Mr. Heaton of Charing-cross Hospital, who has published the results in the *Chemical News*. The water as it leaves the spring at Penderry is remarkably pure, containing in one gallon 10·8 grains total solids, 1·47 chlorine, ·056 nitrogen as nitrates, and no ammonia. After leaving the pipe the total solids had risen to 18·9, of which 6·41 consisted of zinc carbonate. The chlorine was unchanged, but the nitrates had disappeared, and were replaced by ·008 of ammonia, obviously formed by the reducing action of the zinc-iron couple. The zinc was found to be present as carbonate dissolved in free carbonic acid. It was found by independent experiment, that pure zinc is rapidly dissolved when placed in water through which a current of oxygen and carbonic acid gas is passed. The solution of ferrous carbonate by carbonic acid is well known. Many chalybeate springs contain iron in this condition. When such water is exposed to the air the iron is deposited as ferric oxide, which forms the well-known rusty incrustation round the spring. Zinc dissolved in this way could of course be separated from the water by boiling or by precipitation with lime or sodic carbonate, but these processes could hardly be applied to a town supply.

BABY-FARMING.

AT Milton, on Feb. 25th, Esther Williams and Emily Charlotte Green were committed for trial, on the coroner's warrant, for having murdered two children by criminal negligence. The prisoners had charge of five children, all of whom were found to be in an extremely weak condition. The three survivors are progressing towards recovering. Dr. J. F. Waring, Medical Superintendent of the Royal Infirmary, Milton, deposed that he had no doubt that the deceased had been starved to death. It is a social necessity, likely to be increased rather than diminished by our head-over-heels system of compulsory education, that young children should be put out to nurse. Measures must, however, be taken to afford them adequate protection. It would be worthy "work" for the good of humanity if "baby-farms," or the equivalent of these most unsatisfactory institutions, were established by benevolent people. Unfortunately there is so much self-righteousness in our ethical system that we are afraid of anything resembling the foundling-hospital system. Baby-farms properly conducted would, of course, be self-supporting, and, being so, it would be easy to help the mothers through their infants. We have already repeatedly urged that the taking and nursing of babies for profit should be prohibited except to licensed persons. The difficulty would be to enforce any effective law dealing with this matter. We do not think any great good will be done until some step is taken in the direction we have indicated. The establishment of a few well-organised and well-governed institutions for the rearing of young children at the expense of their parents would place the whole question on a new footing, and exert a powerful influence on the practice of baby-farming throughout the land, and thus on all classes of the community.

DEATH UNDER AN ANÆSTHETIC.

ON Tuesday, Feb. 26th, an inquest was held at the Buffalo's Head, Marylebone-road, touching the death of a woman, aged thirty-two, who expired whilst under the influence of an anæsthetic, at the New Hospital for Women. The deceased suffered from hectic fever and profuse purulent discharge from the urinary passages. With the object of clearing up the diagnosis and of relieving the patient, an exploratory incision into the right loin was decided upon after consultation, as the kidney on that side was known to be much enlarged. The A. C. E. mixture, consisting of one part of alcohol, two of chloroform, and three of ether, was administered. Narcosis was successfully induced, and all seemed to be going on well, when suddenly the heart failed, and death ensued from syncope. There was no struggling and no sign of asphyxia. The autopsy was conducted by Mr. Pepper, who found both kidneys full of abscesses. The

heart showed no evidence of organic disease beyond what is usually present in cases of lingering febrile affections. The muscular substance was somewhat pale, but on microscopical examination the striation of the fibres was seen to be for the most part well marked. The exhausted condition of the patient prior to the operation, and the destruction of the greater portion of the secreting tubules of the kidneys, probably contributed in large measure to the fatal event. Every precaution seems to have been taken in the administration of the anæsthetic, and every effort made to resuscitate the patient. The jury returned a verdict in accordance with the medical evidence.

THE ROYAL COMMISSION ON THE HOUSING OF THE POOR.

TAKEN individually, no objection can be raised to the names of any of the members of the Commission appointed to inquire into the housing of the working classes. But regarding the Commission as a whole, it is not altogether satisfactory. Although agreeing with the view that mere experts, either as sanitary engineers, professional architects, or even medical officers of health, are better excluded, still it is a matter for regret that science is not represented on the Commission. Surely the physiologist, the chemist, and the physician would greatly aid in the present inquiry; and to us it is surprising that common sense has not pointed this out to those who were responsible for the formation of the Commission. From among such men as Professor Huxley, Professor Tyndall, Dr. Burdon Sanderson, Dr. Guy, Sir Wm. Jenner, Sir Risdon Bennett, and Professor Frankland, at least two names might surely have been selected who would have added lustre to the Commission, and have proved of immense service in collecting and sifting the evidence that is most wanted.

A FUNCTION OF THE RED CORPUSCLES OF THE BLOOD.

GUILIO FANO in an article published in the journal named *Lo Sperimentale*, but reprinted in the just issued first part of the *Revista Annuale delle Scienze Mediche*, draws the following conclusions from a large number of observations: first, that the peptones, whether transfused or absorbed from the digestive tract, are transformed in the blood into coagulable albuminoids; secondly, that the active agents in this transformation are the red corpuscles, which, assimilating the peptones which have entered into the circulation, augment in specific gravity; thirdly, that the process of dehydration of the peptones, by which they are transformed into globulin, is probably effected by the potassic salts of the red corpuscles, and that perhaps the presence of oxyhæmoglobin is indispensable to the completion of this process; and, lastly, that the albuminoids thus stored up act as reserve aliment, and are surrendered to the tissues in proportion as the process of disintegration occasions a demand for fresh material.

THE SO-CALLED GROCERS' LICENCE BILL.

MR. KENNARD'S letter to a contemporary does not throw any light on the Bill he is "bringing into the House of Commons for the Church of England Temperance Society." It does not in the least degree clear it from the obvious character of a measure which means one thing while it says another, and is therefore uncandid. It is nonsense to pretend that a clause running, "No person shall sell by retail spirits or liqueurs under the authority of any retail licence which such person shall have obtained as a wholesale spirit dealer from the Commissioners of Inland Revenue, except in premises occupied and used exclusively for the sale therein of intoxicating liquor," is necessary to meet the case of the grocers' licence. We do not understand the sense, Pickwickian or otherwise, in which Mr. Kennard says, "These words may appear to an outsider as if they referred to ordinary wine merchants or to public-houses with spirit licences, but they, in fact, refer only to grocers and other mixed traders, and are necessary in order to deal with the existing Act. In short, this Bill is intended to apply simply to the sale of spirits, not wines, by the aforesaid mixed traders only." As a matter of simple fact, the words in question are *not* so chosen as to hit the grocers' licence specifically or that alone. The Society knows perfectly well that they are intended to have a much wider range. This is not the view of an "outsider." It is the plain common sense view, and the promoters of this Bill are simply trying to hoodwink Parliament in bringing it forward. We are strongly opposed to the grocers' licence, and will gladly support, by every means in our power, an honest measure to put an end to that most mischievous permit; but we cannot support the Bill of the Church of England Temperance Society, for it is not what it appears to be, and, aiming at more than it professes to compass, it is insincere.

PUBLIC PROSECUTIONS.

THE answer given by the Attorney-General to Sir G. Campbell relative to the publishing of the Public Prosecutor's reports, detailing the reasons for instituting or refusing to institute official inquiries, was anything but satisfactory. The Director of Criminal Investigations has been so roughly assailed by the public and the press that some explanation of his official conduct is necessary to clear him from the charge of dereliction of duty. It may be, and it probably is, that he is to a great extent trammelled by unworkable rules. If so it is quite time that his course of procedure was placed on a surer footing. Investigations by departmental committees are well enough in their way, but the reports are too apt to be buried in pigeon-holes, and there remain. The Government may be perfectly certain that whilst matters are allowed to rest in their present chaotic condition, the action of the Public Prosecutor will be viewed with distrust.

A NEW CURE FOR CANCER.

INFORMATION of one more remedy alleged to possess special virtues in curing "cancer" reaches us through a correspondent from Brazil. Dr. Ignacio Alcibiades Velloso, of Recife, Pernambuco, introduced the remedy to notice, and in a communication to the *Journal de Recife* gives his experience of its use. He states that the plant which is popularly known by the name of the "alvelos" belongs to the Euphorbiaceæ, and is indigenous to Pernambuco. He alleges that a magistrate who was suffering from epithelioma of the face, and who had returned to his estate despairing of relief, was entirely cured of his disease by the topical application of the juice of this plant. Dr. Velloso, learning this, was induced to employ the same remedy on two patients at the Hospital Pedro II.—one a case of cancroid of the nose, the other of epithelioma of the lip,—with the result that the first patient was "completely cured" in forty days and the second in less than two months, "much to the surprise of the other professional men of the establishment." Such results he thinks justify a trial of the remedy, especially in uterine cancer. The action of the juice of the plant, as others of the same natural order, is irritating, producing a spreading dermatitis without much pain; and the application of the cut stem or the juice of the fresh plant to the diseased part is said to result in destruction of the morbid tissue, which is replaced by healthy granulations—doing the work, in fact, of the chloride of zinc paste. Upon this we need only remark that if the remedy really possess the escharotic action described, there is less reason for doubting its efficacy in such localised

morbid formations as those mentioned than there was for questioning the alleged virtues of other remedies, such as "condurango," which flourished for a time, but which were supposed to operate after they had been taken into the stomach. It is clear, however, that the use of the "alvelos" must be limited to the regions in which the plant grows.

ANTHRAX IN BERMONDSEY.

AN inquest recently held at Guy's Hospital serves again to direct attention to the fact, which the wards of that institution have shown often of late years, that anthrax occurs occasionally amongst the tan-yards of Bermondsey. The subject of the present inquiry was a tanner, who two days before his death complained of pain in the neck, and felt extremely unwell. A small pimple was noticed at the seat of pain, and when next day he was admitted into Guy's, this had developed into a well-marked malignant pustule. It was immediately excised, but the disease was too far advanced to give any hope of success from this procedure, and death occurred on the following day. It appeared that the man had been engaged in sorting some foreign hides known as "hips," and had no gloves on; it was his duty to pick them up with a hook. It was also stated that the hides were first soaked, and that it was not possible to prevent some of the moisture getting upon the clothes or hands of the workmen.

THE CORONER FOR THE NORTHERN DIVISION OF THE COUNTY DOWN.

DR. R. C. PARKE, J.P., the medical officer to Newtownards Workhouse, having recently been appointed a coroner for the northern district of the county Down, the question has arisen as to whether he can hold both appointments at the same time. The Local Government Board have written to the Guardians of the Newtownards Union drawing their attention to the matter, and have informed them that if Dr. Parke undertakes to perform duties which are inconsistent with proper and regular attendance on the sick poor in the workhouse, he must resign the appointment of medical officer. The guardians appear to consider, however, that although Dr. Parke holds the two appointments they are not incompatible, and state that there has never been any complaint of want of attention to his duties. They regard the action of the Local Government Board as arbitrary, and have adjourned the consideration of the question for a fortnight.

FATTY INUNCTIONS FOR FEBRILE CHILDREN.

STRANGE practices are not necessarily bad ones. Of the practice of M. Bouchut, which consists in the inunction of fatty substances all over the cutaneous surface in the acute febrile maladies of children, with a view to the reduction of temperature, but few physicians probably have any knowledge. It is said that the inunction is followed by a period of general comfort and quietude, together with a definite, though not great, diminution in the general temperature of the body. A fall of half a degree Centigrade is usually observed, but occasionally a fall of two degrees has been registered. This initial reduction is followed by a stationary interval of some moments' duration, after which the temperature gradually attains its original height, in about two and a half to three hours after inunction. No evil effects have resulted from this practice; indeed, it is mentioned that albuminuria and serous inflammations were singularly rare in scarlatinal cases treated after the fashion indicated. The systematic greasing of the surface of the body during the desquamative period of scarlatina is obviously not what is meant by the above treatment, though there may be some relationship pathologically.

AGARICINE.

THE night-sweats of phthisical individuals have been the subject of much consideration, more especially from a therapeutical point of view. The number of remedies which are enumerated in Ringer's Handbook is sufficient witness of this truth. M. Seifert of Würzburg has recently made an interesting study of the active principle of white agaric—agaricine. After many trials he has come to the conclusion that pills containing five milligrammes of the alkaloid give the best results in checking the excessive secretion of sweat. As with so many other drugs, the consumer becomes accustomed to agaricine, it is therefore advisable to begin with half a pill and to gradually increase the dose. Account must also be taken of the time at which to administer the remedy, as Seifert has shown that agaricine does not produce its effects for five or six hours. Not only is the excessive perspiration controlled, but the cough becomes less frequent and sleep is more tranquil and continuous. Hypodermic injections have been employed with success, but they are not recommended on account of the production of disagreeable sensations at the site of injection.

A CIRCULAR WARD AT THE HAMPSTEAD INFIRMARY.

THE suggestion made by Professor Marshall some time ago as to the desirability of circular wards for infirmary purposes is now being put into practical form by the guardians of the parish of St. John, Hampstead. An extension of the workhouse infirmary having become necessary, it has been decided to obtain the required accommodation by the erection of a circular ward, 50 ft. in diameter and capable of containing on the three floors seventy-two beds. Special attention has been directed to the regulation of the ventilation and temperature and to sanitation. The total cost of the building, which, it is expected, will be in working order during the present year, is £10,400.

ACTION OF HEAT ON ARTERIES.

THE action of heat as a hæmostatic has been demonstrated experimentally by Dr. Gartner of Vienna (*Allg. Wiener Med. Zeitung*, Feb. 12th, 1884), by observing the circulation in the frog's mesentery under a microscope, illuminated by the electric light. He found that when the heat-rays were cut off the contraction of the vessels, which follows shortly on the exposure of the mesentery, did not occur, and that the degree of contraction was proportionate to the intensity of the heat to which the membrane is exposed; and, provided this be not so great as to coagulate the albumen of the blood, the vessels dilate again on the withdrawal of the part from the influence of the heat rays, proving that the action is due to change in the muscular tonicity of the vessels, and not to any physical alteration in the tissues.

THE MEDICAL BILL.

WE learn, at the hour of going to press, that the Medical Bill is likely to be introduced, in the House of Lords, in the course of the present week.

TO avoid disappointment which might arise from an error in an announcement that appeared in our advertising columns, we may state that Mr. Reeves' second and third lectures at the Hospital for Women, Soho-square, will be delivered on the 13th and 27th inst.

MR. RAWDON MACNAMARA has been re-elected Representative of the Royal College of Surgeons in Ireland on the General Medical Council for the ensuing year.

MESSRS. CROOKES, ODLING, and TIDY, in their report on the composition and quality of daily samples of the water supplied to London during January, state that the water maintained much the same character as that manifested by the supply of the preceding month; its degree of freedom from organic matter, however, being on the whole somewhat less during the latter part than at the beginning of the month. They also call attention to the discordance between the report on the water-supply during December presented by them, and the report made to the Registrar-General, the former being based on the examination of 182 samples, the latter on the examination of 7 samples only.

FROM the report of Colonel Sir Francis Bolton, C.E., on the water supplied by the several metropolitan companies during January, it appears that the Thames water sent out by the Chelsea, West Middlesex, Southwark, Grand Junction, and Lambeth Companies exhibited in each case a marked improvement upon the quality of the previous month's samples; and all the waters contained, for this season of the year, an exceptionally small proportion of organic matter. The water drawn from the Lea and supplied by the New River and East London Companies also showed a corresponding improvement.

IT is intended as a mark of esteem and respect for Dr. Banks, the President of the Irish Academy of Medicine, to entertain him at dinner at the College of Physicians on the 6th inst., and we doubt not that very many of the members of the Academy will assist in paying this compliment to so distinguished a physician.

WE regret to have to record the death of Dr. Alexander Wood, F.R.S.E., which took place on Tuesday last. Dr. Wood represented the Royal College of Physicians, Edinburgh, on the General Medical Council from its formation until 1873, and was one of its most active members.

WE are asked to state that the Committee appointed by the Clinical Society to investigate myxœdema have drawn up a Schedule of Inquiry. A copy will be forwarded to any gentleman who has had cases of this disease under his care, on application to Dr. Hadden, 21, Welbeck-street, W.

DR. CHASSEAUD, Physician to the Hospital Saint Antoine, at Smyrna, Asia Minor, has recently been decorated by the Sultan with the Order of the Medjidie, third class, on account of his success in preventing the spread of cholera, in the year 1883, in Smyrna.

DR. VERDON, medical officer of health for Lambeth, has, in accordance with the Act passed last session, caused an inspection to be made of the bakehouses of the parish, and in 134 cases notices were served upon the occupiers to carry out certain indicated improvements.

THE prevalence of measles in Macclesfield is such that, at the suggestion of the medical officer of health, the authorities have decided to close all the schools in the town for a fortnight.

YELLOW FEVER is stated to be playing havoc with the *employés* on the works connected with the construction of the Panama Canal.

MR. THOMAS WAKEFIELD has been appointed Master of the Apothecaries' Society, in place of Mr. Saner, whose term of office has expired.

THE tercentenary of the University of Edinburgh will be held on the 16th, 17th, and 18th of April.

THE HOSPITALS ASSOCIATION.

THE first Council of the Association has been constituted as follows:—Vice-presidents: The Right Hon. Lord Aberdare, F.R.S., Hospital for Sick Children; Sir T. Fowell Buxton, Bart., London Hospital; Sir Andrew Clark, Bart., LL.D., M.D., London Hospital and East London Hospital for Children; Major Ross, M.P., Middlesex Hospital. Council: The Right Hon. the Earl of Cork and Orrery, K.P., St. George's Hospital; Viscount Powerscourt, K.P., Ireland; Sir Rutherford Alcock, K.C.B., Westminster Hospital and Hospital for Women, Soho-square; H. W. D. Acland, Esq., M.D., C.B., D.C.L., F.R.S., Oxford University; William Bousfield, Esq., King's College Hospital; J. S. Bristowe, Esq., M.D., F.R.S., St. Thomas's Hospital; Henry C. Burdett, Esq., Seamen's Hospital and Home Hospitals Association; J. H. Buxton, Esq., London Hospital; M. D. Chalmers, Esq., London Fever Hospital; Rev. Canon Erskine Clarke, M.A., Bolingbroke House Pay Hospital; Frederick Cox, Esq., Chelsea Hospital for Women and British Lying-in Hospital; W. H. Cross, Esq., St. Bartholomew's Hospital; H. N. Custance, Esq., Metropolitan Hospital Sunday Fund; R. Farquharson, Esq., M.D., M.P., Scotland; Timothy Holmes, Esq., St. George's Hospital and Provident Dispensaries; R. Benson Jowitt, Esq., General Infirmary, Leeds; G. B. Lloyd, Esq., General Hospital, Birmingham; R. H. Lloyd, Esq., Lambeth Infirmary; Charles Macnamara, Esq., F.R.C.S., Westminster Hospital; Malcolm Morris, Esq., St. Mary's Hospital; C. T. Murdoch, Esq., Great Northern Central Hospital; William J. Nixon, Esq., London Hospital; Richard Quain, Esq., M.D., F.R.S., Consumption Hospital, Brompton; T. Gilbart Smith, Esq., M.D., London Hospital and Royal Hospital for Diseases of the Chest; Joseph White, Esq., F.R.C.S., General Hospital, Nottingham.

It is proposed that the evening meetings of the Association shall be held on the third Wednesday in the month. The first, however, will take place on March 26th, when a paper will be read by Mr. William J. Nixon, house-governor of the London Hospital, on "Difficulties associated with the Administration of the Out-patient Department, and how best to deal with them." The meetings will probably be held at the rooms of the Medical Society of London, in Chandos-street, Cavendish-square, the chair being taken at 8 P.M. Persons desirous of being present at the evening meetings, or of becoming members or associates, are requested to communicate with the Secretary, Mr. J. C. Clifford-Smith, at the office, No. 1, Adam-street, Adelphi.

VITAL STATISTICS

HEALTH OF ENGLISH TOWNS.

In twenty-eight of the largest English towns, 5641 births and 3538 deaths were registered during the week ending the 23rd ult. The annual death-rate in these towns, which had been equal to 20·6 and 20·1 per 1000 in the two preceding weeks, rose to 21·1 last week. The lowest rates were 14·1 in Portsmouth, 15·3 in Hull, and 16·0 in Wolverhampton. The rates in the other towns ranged upwards to 26·6 in Halifax, 26·8 in Leeds, 26·9 in Nottingham, and 30·8 in Manchester. The deaths referred to the principal zymotic diseases in the twenty-eight towns, which had been but 399 and 415 in the two previous weeks, further rose last week to 433; they included 127 from whooping-cough, 99 from scarlet fever, 95 from measles, 38 from diarrhœa, 34 from "fever" (principally enteric), 29 from diphtheria, and 11 from small-pox. No death from any of these zymotic diseases was registered last week in Brighton, whereas they caused the highest death-rates in Leeds, Manchester, and Salford. The greatest mortality from whooping-cough occurred last week in Bolton and Manchester; from scarlet fever in Leeds, Preston, and Manchester; from measles in Nottingham, Derby, Oldham, and Salford; and from "fever" in Plymouth. The 29 deaths from diphtheria in the twenty-eight towns included 14 in London, 3 in Liverpool, 3 in Hull, and 2 both in Manchester and Newcastle-upon-Tyne. The 11 fatal cases of small-pox showed a further decline of from the numbers in the two previous weeks, and included 4 in London, 3 in Birmingham, 2 in Sunderland, and 1 both in Liverpool and

Newcastle-upon-Tyne. The number of small-pox patients in the metropolitan asylum hospitals, which had been 97 and 118 on the two preceding Saturdays, further rose to 130 at the end of last week, exceeding the number under treatment in these hospitals at any time since August, 1882; 28 new cases were admitted to these hospitals during last week, against 7 and 28 in the two previous weeks. The deaths referred to diseases of the respiratory organs in London, which had declined in the five preceding weeks from 395 to 334, were 345 last week, and were 164 below the corrected weekly average. The causes of 78, or 2·2 per cent., of the deaths in the twenty-eight towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Portsmouth, Leicester, Newcastle-upon-Tyne, Norwich, and Plymouth. The proportions of uncertified deaths were largest in Sunderland, Oldham, and Birkenhead.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been equal to 24·7 and 20·9 per 1000 in the two previous weeks, rose again to 22·6 in the week ending the 23rd ult.; this rate exceeded by 1·5 the mean rate during the same week in the twenty-eight large English towns. The rates in the Scotch towns ranged from 11·8 and 14·8 in Perth and Leith, to 24·0 in Paisley and 24·9 in Glasgow. The deaths in the eight towns included 77 which were referred to the principal zymotic diseases, showing an increase of but five upon the low number in the previous week; 26 resulted from whooping-cough, 13 from diphtheria, 10 from "fever," 10 from scarlet fever, 10 from diarrhœal diseases, 8 from measles, and not one from small-pox. The rates from these diseases in the Scotch towns ranged last week from 0·0 in Perth, to 2·9 in Greenock, 3·2 in Edinburgh, and 4·2 in Glasgow. The 26 fatal cases of whooping-cough exceeded the number returned in any previous week of this year, and included 18 in Glasgow, 4 in Edinburgh, and 3 in Dundee. The deaths referred to diphtheria, which had been 23 and 14 in the two previous weeks, further declined to 13 last week, of which 6 occurred in Glasgow, 3 in Edinburgh, and 2 in Aberdeen. Eight of the 10 deaths from scarlet fever, and 6 of the 10 from "fever," were returned in Glasgow. The 8 fatal cases of measles showed a decline from the numbers in the two previous weeks, and included 4 in Edinburgh and 2 in Glasgow. The deaths referred to acute diseases of the respiratory organs in the eight towns numbered 108, and were 30 below the number in the corresponding week of last year. The causes of 100, or more than 18 per cent., of the deaths in the eight towns last [week were not certified.

HEALTH OF DUBLIN.

The rate of mortality in Dublin, which had steadily increased from 24·5 to 31·4 per 1000 in the four preceding weeks, was equal to 30·0 in the week ending 23rd ult. During the first eight weeks of the current quarter the death-rate in the city averaged no less than 28·5 per 1000, whereas it did not exceed 20·2 in London and 20·7 in Edinburgh. The 202 deaths in Dublin last week showed a decline of 9 from the [high number in the previous week; they included 4 which were referred to "fever" (including typhus, enteric, and simple continued), 4 to scarlet fever, 4 to diarrhœa, 3 to whooping-cough, and not one either to small-pox, measles, or diphtheria. Thus 15 deaths resulted from these principal zymotic diseases, against 17 and 11 in the two preceding weeks. Five deaths from violence and 2 inquest cases were registered. The deaths both of infants and of elderly persons showed a decline, while those registered in public institutions exceeded the number in any recent week. The causes of 46, or 23 per cent., of the deaths registered during the week were not certified.

MORTALITY STATISTICS IN MONTREAL.

Towards the close of last year was issued a report on the sanitary condition of the city of Montreal for the year 1882 by the health officer, Dr. La Rocque. The population of this city in 1882 is estimated at 144,000 persons, and the death-rate was equal to 27·1 per 1000, against an average of 31·8 in the ten preceding years, in which the rate ranged from 37·4 in 1872 to 26·9 in 1880. It is noted that among the French Canadians, who constituted more than half the population of the city, the death-rate in 1882 was 32·5, while it was 23·5 among other Catholics, and only 18·2 among the Protestants. With regard to the remarkably high death-rate among the French Canadians, it is noted that 61·7 per cent. of the total deaths were of children under five years of age. Of the 3906 deaths from all causes in Montreal, 163 resulted from diphtheria, 106 from typhoid fever, 459 from diarrhœal diseases, 440 from phthisis, and 311 from bronchitis and pneumonia. No fewer than 929, or nearly 24 per cent., of the deaths resulted from the principal zymotic diseases, being equal to a rate of 6·5 per 1000 persons living. This high zymotic rate, combined with the excessive death-rate among children, supplies the explanation of the constant high death-rate in Montreal in recent years. It is satisfactory to learn that the municipality of Montreal is showing much zeal and energy in promoting the agitation in favour of passing a Provincial Health Bill, the object of which is to place the sanitary organisation of the Province of Quebec on a more satisfactory basis. The prosperity and material progress of the colony are more intimately bound up with its sanitary condition than is yet fully and generally recognised.

THE SERVICES.

ARMY MEDICAL DEPARTMENT.—Brigade Surgeon Eugene Francis O'Leary, M.D., retired pay, has been granted the honorary rank of Deputy Surgeon-General.

ADMIRALTY.—The following appointments have been made:—Staff Surgeon W. H. Putsey to the *Boscawen*, vice Clarke, the appointment of Staff Surgeon Trevan having been cancelled; Surgeon C. E. Geoghegan to the *Flirt*; Surgeon D. T. Hoskyn to the *Shannon*, vice C. E. Geoghegan; Surgeon J. A. M'Adam to the *Duncan*, vice Armstrong; Surgeon John Acheson, M.D., to the *Duke of Wellington*.

ARTILLERY VOLUNTEERS.—3rd Kent (Royal Arsenal), Acting Surgeon William Ashton Ellis resigns his appointment.

RIFLE VOLUNTEERS.—1st Dumfries: Acting Surgeon John Maxwell Davidson resigns his appointment.—7th West Riding of Yorkshire (Leeds): Surgeon Francis Edward Atkinson resigns his commission.—1st Suffolk: George Jones, Gent., to be Acting Surgeon.

Correspondence.

"Audi alteram partem."

A SOCIETY OF MEDICAL OFFICERS OF SCHOOLS.

To the Editor of THE LANCET.

SIR,—It has been suggested by some of the medical officers of the large educational establishments that benefit would arise from a comparison of their varied experiences in questions of hygiene relating to the youth of both sexes. To-day, owing to the isolation of the various great schools of the country, and the absence of any organisation such as we suggest, there is no centre where the lessons learned in one establishment may be recorded for the benefit of similar institutions. The whole subject of school hours, periods of study, recesses, the feeding and lodgment of pupils, the isolation of infectious disease, quarantine, the question of the structure of class-rooms and school equipment, gymnastic training and field sports, over-pressure and cramming—all need discussion; and it is believed that advantage would result from the foundation of a Society to consider these matters and collect information. Such a Society would consist of the medical officers, past and present, of our great male and female schools of every class (public, private, charitable, reformatory, or industrial), and probably of others interested in these subjects, and of medical men engaged in the study of the ailments of young persons and children. It would meet periodically to read papers on these questions, and to discuss combined action on various points. A considerable number of school medical officers approve the idea, and it is desired to bring the subject to the notice of all medical men interested in school hygiene and the health conditions of young people.

Those who would like to help in forming the Association,

and have not already communicated with either of us, are invited to do so, after which we propose calling a meeting in London to arrange the preliminary details.

We are, Sir, yours faithfully,

G. J. H. EVATT, M.D.,
Surgeon-Major A.M.D., Medical Officer R.M. Academy, Woolwich.

ALDER SMITH, F.R.C.S., M.B.,
Resident Medical Officer, Christ's Hospital, London.

London, Feb. 22nd, 1884.

DEPUTY SURGEON-GENERAL O'LEARY.

To the Editor of THE LANCET.

SIR,—In your notice under the above heading, in your issue of the 16th inst., you write—"We think it is to be regretted that Dr. O'Leary has allowed so long a time to elapse before calling upon these papers (*The Times* and *Globe*) to contradict Sir Drury Lowe's statements." May I be permitted to point out that on June 5th last I wrote to *The Times* complaining of the wrong they had done me, and requesting that it might be remedied by the publication of my evidence before Lord Morley's Committee. An application of a similar kind from another source was also made to *The Times*, but with no effect, and it was only after my return home, and when I had made two more applications, that *The Times* published my letter. As regards the *Globe*, it was only a short time ago, since my return from Egypt, that I saw, for the first time, the article in the paper of the 21st of May last.

Your obedient servant,

E. F. O'LEARY, M.D., Brigade-Surgeon.

Junior Army and Navy Club, Feb. 24th, 1884.

*** We gladly insert the above letter, and take the opportunity of congratulating Dr. O'Leary on his being granted the honorary rank of Deputy Surgeon-General—a step on the part of the military authorities which may be regarded as evidence of their opinion of the complete vindication of his character.—ED. L.

THE ROGERS TESTIMONIAL.

To the Editor of THE LANCET.

SIR,—Will you kindly insert the enclosed thirteenth list of subscriptions in this week's LANCET, and oblige, yours truly,

J. WICKHAM BARNES.

Poor-law Medical Officers' Association, 3, Bolt-court, Fleet-street, London, Feb. 27th, 1884.

Albert Southey, Esq., Colnbrook, £1 1*s.*; Dr. E. S. Willett, Isleworth, £1 1*s.*; Messrs. Pinching, Gravesend, 10*s.* 6*d.*; H. T. Ward, Esq., Calstock, Devon, 5*s.*; Dr. T. Morgan, Montgomery, 5*s.*

The promoters of the expression of opinion of Dr. Joseph Rogers' public work, during upwards of thirty years, desire to inform the profession and the public that the subscription list will remain open until the end of March.

LIVERPOOL.

(*From our own Correspondent.*)

THE RECENT POISONING CASES.

IN all remarkable trials the interest culminates in the judge's summing up; and this was well illustrated in the late trial of Catherine Flannagan and Margaret Higgins, now under sentence of death. Mr. Justice Butt's charge was heard in a court in which every inch of sitting or standing room was fully occupied, amidst profound silence. It is quite clear that four persons came by their death from arsenic administered by one or both prisoners, and there is too much reason to fear that these form only a proportion of the whole number of victims. In all of them advantage was taken of the occurrence of some ailment to call in a medical attendant, who was in each instance completely deceived as to the history of the case and the more urgent symptoms previous to death. The cases all presented that insidious character which cases of murder by poison usually do; and it is here generally acknowledged that Dr. Whitford deserves great credit for the promptitude with which he acted when the suspicious surroundings of the case were made known to him.

ARSENICAL FLY-PAPERS.

It is now well known that the poison was obtained from fly-papers, and though this is, so far as is known, the first case in which these papers have been used criminally, their dangerous nature was pointed out twenty-four years ago. In "Taylor's Medical Jurisprudence and Manual on Poisons" it is stated that "a coarse sort of blotting-paper, soaked in a solution of arseniate of potash, is extensively sold for killing flies under the name of *Papier Moure*. It has been erroneously represented that the substance with which it is impregnated is not poisonous to human beings." In THE LANCET of Feb. 11th, 1860, will be found a letter from the late Dr. R. H. Brett, formerly lecturer on Chemistry and Toxicology at the Liverpool School of Medicine, giving the results of his examination of different specimens of *Papier Moure*. He found an average of 5·3 grains of arsenic in each, and concludes his letter in these words, "Such papers, sir, are sold without any restriction. Should they be allowed to be sold at all, when two or three of them contain sufficient arsenic to poison a whole family?" A leader in the same issue has the following prophetic sentence: "The sale of these fly-papers amounts, in one sense, to nothing else than the unrestricted sale of arsenic, which the Legislature have sought to forbid. Very little ingenuity is needed to remove the arsenic from the papers; and although we are not disposed to detail the means, yet it were dangerous affectation to speak with bated breath of this source of possible danger."

THE LIVERPOOL ABATTOIRS.

A meeting of the medical profession was held at the Medical Institution on Monday, under the presidency of Dr. Waters. The meeting was a large one, and comprised nearly all the leading physicians and surgeons, as well as members of the profession generally, whether members of the institution or not. The following resolutions were carried unanimously:—"That in the opinion of this meeting the existence of slaughter-houses, with their concomitant offensive trade, in the heart of a great city like Liverpool, and in the midst of a dense population, cannot be regarded in any other light than that of a nuisance and injurious to public health"; "That steps should be taken to oppose the renewal to the Abattoir Company of their present lease, by which the existing nuisance would not merely be perpetuated, but seriously increased." It was also resolved that a deputation, consisting of the following gentlemen, Drs. Waters, Cameron, Carter, Caton, Campbell Brown, Glynn, Davidson, and Messrs. Bickersteth, R. Harrison, Shadford Walker, and Mitchell Banks, should wait upon the mayor with a memorial, drawn up in the sense of the above resolutions.

CASES AT THE LOCK HOSPITAL UNDER MR. BERNARD.

There is at present in the hospital a man recovering from a severe pustular syphilide presenting the varioloid character. At first this patient had all the appearance of suffering from variola. The eruption was very copious on the forehead, face, chest, back, and arms; the lower extremities were hardly affected. The pustules remained for upwards of a fortnight, shrivelled slowly, leaving the papule reddish at first, then coppery, ultimately desquamating. The eruption was at its height six weeks ago; at present there are merely pigmentary stains to indicate the presence of the syphilide. Another case with interesting features occurred in a female patient, from whom an extensive crop of excrescences, extending from the lower part of the mons veneris, and occupying the whole extent of both labia majora and part of the inner surface of the thighs, covering the perineum and extending to the anus, were removed by the thermo-cautery. This patient was discharged on the 26th without any trace of the growths whatever. A severe case of extensive sloughing of the prepuce was admitted on the 25th. This patient had been drinking heavily previously to admission, and was in a very debilitated condition. Nitric acid was applied to the slough at once, and a stimulating diet prescribed. He appeared much improved the following day, and iodoform dressings were commenced.

SCOTTISH NOTES.

(*From our own Correspondent.*)

MEDICAL CANDIDATES FOR PARLIAMENT.

WHETHER from the undoubted popularity of Dr. Farquharson as the representative of West Aberdeenshire, and a desire to take further samples from the bulk of London

practitioners, or from mere coincidence, it is noteworthy that at present the names of medical men practising in the metropolis are mentioned in connexion with two other northern counties of Scotland. "Dr. Clark" of London, which of the gentlemen of that name is not stated, has at the request of a political association in Caithness-shire, already appeared before the electors, and the newspaper reports agree that his reception was of an enthusiastic character. He is evidently a very advanced Liberal, is warmly supported by the crofters and their friends, and in the event of the franchise being extended, will probably command a majority of votes. The more active reformers in the neighbouring county of Ross have invited Mr. Roderick Macdonald of Millwall, a true Highlander and a platform orator, always to the front on questions interesting to his fellow-countrymen, to stand in their interests. The amount of threatened opposition is in this case very formidable, and as yet it is not certain that Mr. Macdonald will accept the position of candidate offered him. However satisfactory it may be to see agricultural constituencies requesting the services of medical men as independent politicians, one cannot avoid a wish that in these days, when sanitary reform has been shown to be of such vast concern to all classes, a demand does not spring up in our great centres for representatives able and willing to devote special knowledge and talents to the solution of social and health problems. So far as Scotland is concerned in the matter, the example of Dr. Cameron's success as a legislator might induce constituencies to secure men of a similar class; but in the meantime an acceptable candidate must first of all be a strong party man, and opinions concerning social questions are overlooked among the many other requirements. It is a notable fact that Dr. Cameron has passed more Bills than any Scotch, or perhaps other, Member during the present Parliament.

HEALTH MATTERS IN DUNDEE.

At a time when such a warm and enlightened interest has been shown by the public and the profession of Dundee in matters pertaining to the health and well-being of the inhabitants, it seems strange to read of the niggardly conduct of the authorities towards their medical officer of health. It will scarcely be believed that this important and wealthy, but in many respects insanitary, town expects efficient medical supervision, and receives it, for £75 a year! The absurdity of the arrangement was plainly enough shown when the appointment was made; and less sympathy may on this account be felt towards Dr. Anderson, who, in the face of all that was said, accepted the miserable remuneration, but no one can have watched the zeal, knowledge, and enthusiasm which that gentleman has brought to bear upon his work without feeling that his application for an increase of salary should have been unnecessary instead of being rejected.

ABERDEEN DISPENSARY.

In anticipation of the annual meeting of subscribers a draft report of the work of the Aberdeen Dispensary for the past year has been published. No fewer than 7979 ordinary cases have been seen, and of these 2568 have been visited at their own homes; 201 midwifery cases have been attended, and by the addition of ear and throat cases, &c., a total of 9685 is reached. Even this huge aggregate—which is independent of the out-door work at the infirmary—shows a falling off when compared with the previous year, but, as was noted both in Perth and Leith, the diminution is largely due to the small number of zymotic cases treated. The entire absence of typhoid is certainly very remarkable when we bear in mind the wretched houses visited by the officers. During recent years an increasing number of students take advantage of the clinical teaching offered by the medical officers, and last year 47 attended the practice of the institution. The students acknowledge that in some respects they are better trained for private practice here than at the hospital. Dr. J. G. Hall has resigned his appointment, and Dr. Ruxton, who stood next to the successful candidate at the last election, and is a good man, may probably be appointed.

A feeling of dissatisfaction is pretty freely expressed in Aberdeen, especially by the many zealous workers of last year, that the extension of the Children's Hospital is not being proceeded with. It is known that there are certain difficulties in connexion with the acquiring of the ground, but it is felt that a little more energy might be shown, in view of the continued demand for beds and the consequent overcrowding in the wards. In their forthcoming annual report the directors may perhaps explain.

It is so satisfactory to hear of energy in health matters on the part of the Board of Supervision that their peremptory instructions to a local authority to, within a month, set about securing an adequate water-supply may be noted. I believe the population of the village is about 200!

Obituary.

JAMES HICKINBOTHAM, M.D.

THE death of Dr. Hickinbotham, on Feb. 22nd, at the age of forty-four, after a few days' illness, of acute nephritis, is another instance, too common, of the head of a family cut off in the prime of life and activity. Dr. Hickinbotham was a native of Loughborough, and at an early age settled in Birmingham, where for many years he conducted a large practice in one of the suburbs. Some five years ago he removed to the centre of the town, and was appointed one of the physicians to the Hospital for Women. He interested himself in municipal politics, and contested one of the wards in the Conservative interest. He was also a member of the board of guardians, and chairman of the infirmary committee of that body. Of energetic and active disposition, he discharged his duties with zeal and assiduity, and, from his geniality and kindness to the poor, gained many friends. He leaves a widow and six children to mourn his loss.

MEDICAL NOTES IN PARLIAMENT.

Housing of the Poor.

IN the House of Lords on Feb. 22nd, in reply to a motion by Lord Salisbury, it was announced that Her Majesty had appointed a Royal Commission to inquire into the condition of the dwellings of the poor in England. His Royal Highness the Prince of Wales, who made a maiden speech in the debate, expressed himself gratified at being appointed one of the commissioners.

In the House of Commons, on one or two subsequent days, the Government were asked to extend the scope of the Commission to Ireland and Scotland. Mr. Gladstone declined to do this, but Sir Charles Dilke intimated that possibly another Commission would be appointed to deal with the sister countries. With regard to placing Miss Octavia Hill on the Commission, Sir Charles Dilke said he knew of no bar to the appointment of a lady, but doubtless Miss Hill would be very useful as a witness.

Cholera Reports.

Mr. G. Russell stated to Dr. Cameron on Thursday, the 21st ult., that the reports of the Commission recently sent out by M. Pasteur and Dr. Koch to Egypt and India would be laid upon the table.

The Army Medical Service at Suakim.

Lord Hartington, in reply to Sir H. Verney, on Feb. 22nd, said the arrangements for equipping the medical service of the expedition to Suakim had been made locally, and reports as to details had not yet been received. The Army Hospital Corps in Egypt had been reinforced by a detachment of fifty non-commissioned officers and men.

The Army Hospital Corps.

Lord Hartington stated to Baron de Worms that the question of a militia reserve for the Army Hospital Corps was under consideration, and general officers commanding districts had been requested to obtain information upon it from commanding officers of militia.

Local Sanitary Regulations.

On Monday, at the time of private business, it was agreed, on the motion of Mr. Hibbert, to refer to a Special Committee all local Bills which proposed to create new powers relating to police or sanitary regulations.

Army Transport.

Dr. Cameron gave notice to call attention to the defective transport and commissariat systems of the British and Indian Army Services.

Water Pollution.

Sir W. Harcourt, in reply to Lord G. Hamilton, promised to examine from every point of view the present state of the

law, which admits of the pollution of subterranean water-supplies.

Peculiar School Punishments.

Mr. Mundella stated to Dr. Cameron that the master of the Lochgoilhead public school admitted having poured castor oil down the throats of children as a punishment, but denied having bastinadoed them. The local inspector had been directed to hold an inquiry into the general conduct of the master.

Over-sizing Cotton Goods.

Sir W. Harcourt replied to Sir G. Campbell that a commission appointed by the Home Office had made inquiries as to the over-sizing of cotton goods, and its effect upon the health of the operatives. The inquiry had already had a good result, and he hoped further good results would follow.

Contagious Disease at Chatham.

Sir C. Dilke informed Mr. C. Bentinck that the Local Government Board had received a copy of a report made to the Medway Board of Guardians by Dr. Buchanan regarding the present state of contagious disease at Chatham; but he did not propose to produce it.—Mr. Bentinck gave notice that he will move that the report be laid on the table.

The Indian Medical Service.

On Thursday, Mr. Gibson asked the Under Secretary of State for India whether any steps had been taken since last August by Her Majesty's Government to meet the grievances of the Indian Medical Service, and to lessen the dissatisfaction which existed in all its ranks. Mr. J. R. Cross said that last year the number of annual appointments in the Indian Medical Service was reduced to the lowest pitch compatible with present requirements and the future efficiency of the Department. This measure was still being carried out. It was not proposed to take any other step in the matter. Mr. Gibson said he should take the earliest possible opportunity of drawing attention to the weaknesses of the Indian Medical Service, and would move a resolution.

Medical News.

APOTHECARIES' HALL. — The following gentlemen passed the examination in the Science and Practice of Medicine, and received certificates to practise, on Feb. 21st:—

Bailey, W. Henry, Colney Heath Rectory, St. Albans, Herts.
Becher, G. J. Dashwood, Endsleigh-street, Tavistock-square.
Brooks, Samuel John, Tollington Park.
Cooper, John Wilford, Hungerton, Grantham.
Eliot, Ernest Frederic, Aston Vicarage, Birmingham.
Gwynne, John Hickling, The Poplars, Cannock, Staffordshire.
Haydon, Hillyard W., Cholmeley Park House, Highgate.

BELFAST ROYAL HOSPITAL.—At a quarterly meeting of the General Board of Management of the Belfast Royal Hospital, held last Monday, it was stated that the institution this week will be in debt to the amount of £1697.

THE Marchioness of Lorne visited Westminster Hospital on Saturday last, and in walking through the wards exhibited great interest in the cases of different patients, to many of whom she addressed words of sympathy.

PRESENTATION.—On the 22nd ult. the members of the Border Counties Branch of the British Medical Association presented Dr. Taylor, of Penrith, with an illuminated address on the occasion of his retirement from the practice of his profession.

SAVING OF LIFE AT SEA.—Mr. W. Hempson Denham, surgeon, of Southsea, having constructed a "Reliance boat" for saving of life at sea, it is proposed to form an association to facilitate its introduction to home and foreign use.

UNIVERSITY OF CAMBRIDGE.—The following have been elected members of the Board of Electors to the undermentioned professorships until February 20th, 1892:—Chemistry, Professor Dewar; Anatomy, Dr. Paget, Professor of Physic; Botany, Professor Michael Foster; Jacksonian Professorship, Professor Liveing; Zoology and Comparative Anatomy, Professor Michael Foster; Downing Professor of Medicine, Dr. T. Lauder Brunton, Edinburgh; Physiology, Mr. J. N. Langley, Trinity; Pathology, Dr. Latham, Downing Professor of Medicine; Surgery, Mr. Timothy Holmes, Pembroke. Dr. Hans Gadow, Strickland Curator, has been approved as a teacher of Comparative Anatomy; Mr. Laurence Humphry, M.A., M.B., Trinity, as a teacher of Pathological Anatomy; and Mr. E. H. Neville, Sidney-Sussex, as a teacher of Practical Chemistry.

FIRE AT A LUNATIC ASYLUM.—One night last week a fire broke out at Dr. Beaman's Lunatic Asylum, Haydock Park, Wigan. Fortunately, the fire was confined to the domestic offices adjoining the main building, and these were entirely gutted. The inmates were removed to the end of the building, where they remained in safety. The damage amounts to about £2000, which, we understand, is covered by insurance.

BEQUESTS.—Mr. Benjamin Ball, late of Merrion-square, Dublin, bequeathed £1000 each to the Adelaide Hospital, the City of Dublin Hospital, and the Rotunda Hospital, £500 to the Whitworth Hospital, and £300 to the Coombe Lying-in Hospital.—By the will of the late Mr. W. T. Smart, of Brighton, the Sussex County Hospital receives £100. The Royal Infirmary, the Children's Infirmary, and the Lying-in Hospital, all of Liverpool, receive each £100 under the will of the late Miss Catharine Cain, of Southport.

OVER-PRESSURE IN BOARD SCHOOLS.—At Bradford, on the 27th ult., a deputation of medical men waited upon the School Board and presented a memorial praying the Board to dispense with home lessons as far as regards children under ten years of age. Dr. Rabagliati said that the Registrar-General's returns showed that since the Education Act came into force the deaths from water on the brain amongst children of school age had increased by 20 per cent., and from inflammation of the brain by 50 per cent.; the latter not, however, solely amongst children.

LECTURE IN BETHLEM HOSPITAL.—Mr. Walton Haydon, F.R.G.S., delivered a lecture on Saturday, Feb. 16th, in the theatre of the Bethlem Royal Hospital, to the patients, on the subject of the "Far North," in which he described most graphically the modes of life in and the scenery of the Hudson's Bay Territory, the interest being increased by the exhibition of some good type likenesses of the native tribes, some of which are at present represented but by one or two survivors. The medical history of the district was described in a highly interesting manner, and will serve to form a starting-point for other observers. Mr. Haydon has collected a splendid fund of facts as to the natural history of this wild region, where the post arrives but twice a year.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.—The following is the list of officers nominated for 1884-1885:—President: *George Johnson, M.D., F.R.S. Vice-Presidents: *William Overend Priestley, M.D.; Reginald Thompson, M.D.; Richard Barwell; William Scovell Savory, F.R.S. Treasurers: Charles B. Radcliffe, M.D.; John Cooper Forster. Secretaries: Richard Douglas Powell, M.D.; Matthew Berkeley Hill. Librarians: Wilson Fox, M.D., F.R.S.; John Whitaker Hulke, F.R.S. Other members of Council: G. F. Blandford, M.D.; Dyce Duckworth, M.D.; Samuel Jones Gee, M.D.; F. W. Pavy, M.D., F.R.S.; *C. Theodore Williams, M.D.; *John Croft; *Sir William Mac Cormac; *J. Pickering Pick; *William Sedgewick; William Spencer Watson. Those gentlemen to whose names an asterisk is prefixed were not on the Council, or did not fill the same office last year.

Medical Appointments.

Intimations for this column must be sent DIRECT *to the Office of* THE LANCET *before 9 o'clock on Thursday Morning at the latest.*

CAIGER, F. F., M.B., B.S., M.R.C.S., L.R.C.P., has been appointed House-Surgeon to St. Thomas's Hospital.

DALY, CHARLES HENRY, L.K.Q.C.P.I., L.R.C.S.I., has been appointed Medical Officer for the Honley District of the Huddersfield Union.

DAVIES, BENJAMIN, M.D.Edin., F.R.C.S., has been appointed Physician to the Newport (Mon.) Infirmary, on resigning the office of Surgeon.

FAIRER, MATTHEW ROBINSON, M.B., C.M.Ed., has been appointed Medical Officer for the Kirkby Stephen District and Workhouse, East Ward Union.

GAYTON, WILLIAM, M.D.Brux., M.R.C.P.Ed., M.R.C.S., has been appointed Medical Officer for the North-Western District, under the Metropolitan Asylums Board.

GOOD, FRED. THOMAS, M.R.C.S., L.S.A.Lond., has been appointed Medical Officer for the Second District of St. Neots Union.

GREEN, C. D., M.R.C.S., L.R.C.P., has been appointed House-Physician to St. Thomas's Hospital.

HODSDON, JAMES W. B., M.D., M.R.C.P.E. (exam.), F.R.C.S.E., has been appointed an Extra Physician to the Edinburgh Royal Hospital for Sick Children, vice Dr. J. Playfair, appointed Ordinary Physician.

HULL, WALTER, M.B., M.R.C.S., L.R.C.P., has been appointed House-Physician to St. Thomas's Hospital.

HUTCHINSON, JOHN GARBUTT, L.R.C.P.Ed., L.R.C.S.Ed., has been appointed Medical Officer for the Kineton District of the Stratford-on-Avon Union.

JOHNSTON, G. D., M.R.C.S., L.R.C.P., has been appointed House-Surgeon to St. Thomas's Hospital.

JONES, W. WANSBROUGH, M.A., M.B., M.R.C.S., has been appointed Resident Accoucheur to St. Thomas's Hospital.

MACDONALD, ANGUS, M.D., F.R.C.P.Ed., F.R.C.S.Ed., has been appointed Physician to the Royal Maternity and Simpson Memorial Hospital, vice Simpson, whose term of office has expired.

MACDONALD, W. FRASER, M.B., C.M.Ed., has been appointed House-Surgeon to the Royal Maternity and Simpson Memorial Hospital.

ORFORD, JOHN, M.R.C.S., L.R.C.P., has been reappointed Non-resident House-Physician to St. Thomas's Hospital.

ORMOND, H. GARLAND, M.B.Ed., C.M., M.R.C.P.E., has been appointed Visiting Medical Officer to Watts' Hospital, Leith, vice Dr. Robert Paterson, resigned.

ROBINSON, H. B., M.R.C.S., L.R.C.P., has been appointed Clinical Assistant in the Special Department for Diseases of the Skin at St. Thomas's Hospital.

SANKEY, H. R. O., M.B.Lond., has been appointed Medical Superintendent to the Warwick County Lunatic Asylum, Hatton, vice Dr. Parsey, deceased.

SHEPPARD, W. J., M.B., M.S., M.R.C.S., L.R.C.P., has been appointed Assistant House-Surgeon to St. Thomas's Hospital.

SMITH, JAMES WILKIE, M.D., C.M.Ed., has been appointed Medical Officer for the Ryton District of the Gateshead Union.

SPENCE, WILLIAM, M.B., C.M.Ed., has been appointed House-Surgeon to the Royal Maternity and Simpson Memorial Hospital.

TOMSON, W. B., M.B., M.R.C.S., L.R.C.P., has been appointed Assistant House-Physician to St. Thomas's Hospital.

WOOLBY, J. B., M.B.Lond., has been appointed Resident Medical Officer to the Queen Charlotte's Lying-in Hospital.

Births, Marriages, and Deaths.

BIRTHS.

ANDERSON.—On the 28th ult., at Leipzig, the wife of A. J. Anderson, M.A., M.B.Oxon., of a daughter.

BRAND.—On the 16th ult., at "Invery," Driffield, East Yorkshire, the wife of Alexander Theodore Brand, M.B. & C.M., of a daughter.

HARRISON.—On the 23rd ult., at Hastings, the wife of R. Charlton Harrison, L.R.C.P., M.R.C.S., of a son.

HARSANT.—On the 21st ult., at Clifton, Bristol, the wife of W. Henry Harsant, F.R.C.S., of a daughter.

KEATES.—On the 20th ult., at Tredegar-villas, East Dulwich-road, the wife of William Cooper Keates, M.R.C.S., L.R.C.P.Lond., of a son.

NANKIVELL.—On the 23rd ult., at 31, Southernhay, Exeter, the wife of Frank Nankivell, M.D., of a son.

STARK.—On the 22nd ult., at Beckett House, Wantage, the wife of M. Dugald Stark, M.D., C.M., of a daughter.

THOMPSON.—On the 20th ult., at Potter's-bar, the wife of Thomas William Thompson, Surgeon, of a son.

WARD.—On the 17th ult., at Eblana-terrace, North Circular-road, Dublin, the wife of Surgeon-Major E. C. R. Ward, F.R.C.S.I., Army Medical Department, of a son.

MARRIAGES.

GOOD—BOWER.—On the 23rd ult., at the Parish Church, St. Neots, Hunts, Frederick T. Good, F.R.C.S., of St. Neots, second son of A. Good, Esq., of Downe, Kent, to Mary, younger daughter of the Rev. A. Bower, of Calstor, Lincolnshire.

OUTHWAITE—WILLIAMS.—On the 21st ult., at St. Paul's, Herne-hill, William Outhwaite, M.R.C.S., of Denmark-hill, to Mary Sophia, third daughter of the late Rev. William Williams, M.A.Cantab., Rector of Llanychan, Denbighshire.

POWELL—LEWIS.—On the 19th ult., at St. Stephen's, Westbourne-park, John James Powell, L.R.C.P.Lond., M.R.C.S., of Blyton House, Weybridge, eldest son of J. J. Powell, Esq., of Heathlands, Weybridge, to Marion Emily, second daughter of Professor T. Hayter Lewis, F.S.A., of Kensington-gardens-square, W.

TOWNSEND—MAC MULLEN.—On the 21st ult., at St. Nicholas' Church, Cork, Edmond Townsend, Surgeon-Major, A.M.D., second son of W. C. Townsend, M.D., South Mall, Cork, to Frances Josephine, youngest daughter of J. W. Mac Mullen, Clontymon, Cork.

DEATHS.

FERNIE.—On the 22nd ult., at Barnstaple, Devon, Andrew Fernie, M.D., son of the late Rev. John Fernie, Rector of Yeldon, Bedfordshire.

HICKINBOTHAM.—On the 22nd ult., at Broad-street, Birmingham, James Hickinbotham, M.D., aged 44.

MACDONOGH.—On Jan. 1st, at New Zealand, Patrick MacDonogh, L.R.C.P., fourth son of John MacDonogh, Surgeon, of Clapham-park-road, aged 29.

MCROBERT.—On the 18th ult., at Westray, Orkney, Henry Gray McRobert, M.B.Aberd., & C.M.

WOOD.—On the 26th ult., at Strathearn-place, Edinburgh, Alexander Wood, M.D., F.R.C.P.E.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths

Medical Diary for the ensuing Week.

Monday, March 3.

ROYAL LONDON OPHTHALMIC HOSPITAL, MOORFIELDS.—Operations, 10½ A.M. each day, and at the same hour.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL.—Operations, 1½ P.M. each day, and at the same hour.

METROPOLITAN FREE HOSPITAL.—Operations, 2 P.M.

ROYAL ORTHOPÆDIC HOSPITAL.—Operations, 2 P.M.

ST. MARK'S HOSPITAL.—Operations, 2 P.M.; on Tuesday, 9 A.M.

HOSPITAL FOR WOMEN, SOHO-SQUARE.—Operations, 2 P.M., and on Thursday at the same hour.

ROYAL INSTITUTION.—3 P.M. Professor Geikie, "On Scenery of the British Isles."—5 P.M. General Monthly Meeting.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—4 P.M. Professor Flower, "On the Principal Types of the Human Species."

ODONTOLOGICAL SOCIETY OF GREAT BRITAIN.—8 P.M. Casual Communications by Messrs. E. L. Williams, W. Hern, F. N. Pedley, G. W. Field, A. S. Underwood, &c.—Communications will be read from Messrs. Dunn, of Florence, and F. R. Lloyd, of Agra, India.

MEDICAL SOCIETY OF LONDON.—8 P.M. General Meeting.—8.30 P.M. Surgeon-General Hunter, "On the late Epidemic in Egypt."

Tuesday, March 4.

GUY'S HOSPITAL.—Operations, 1½ P.M., and on Friday at the same hour. Ophthalmic Operations on Mondays at 1.30 P.M., and Thursdays at 2 P.M.

WESTMINSTER HOSPITAL.—Operations, 2 P.M.

WEST LONDON HOSPITAL.—Operations, 2.30 P.M.

ROYAL INSTITUTION.—3 P.M. Professor Gamgee, "On Animal Heat."

PATHOLOGICAL SOCIETY OF LONDON.—8.30 P.M. The following specimens will be shown:—Neoplasm affecting the Knee-joint; Fracture of Cartilage of First Rib; Insular Sclerosis; Interstitial Disease of Ovary; Symmetrical Gangrene; Fibrotic Disease of Heart; Stomach from Case of Carbolic Acid Poisoning (card); Œsophagus, Stomach, and Intestine from Case of Carbolic Acid Poisoning (card); Lodgment of Fish Bone in Larynx (card); Sarcoma of Tonsil (living specimen); Nasal Calculus (card); Myeloid Sarcoma of Head of Tibia (card); Photograph of Congenital Absence of Femora; Obstruction of the Trachea in a Child from Pressure by Bronchial Glands; Micrococci from Infective Osteo-Myelitis (card); Right Aortic Arch (card); Intussusception with Fatty Tumour of Intestine (card); Tuberculosis after Scarlatina and Caseous Glands (card); Heart with Left Superior Vena Cava (card); Anchylosis of Cervical Vertebræ (card).

Wednesday, March 5.

NATIONAL ORTHOPÆDIC HOSPITAL.—Operations, 10 A.M.

MIDDLESEX HOSPITAL.—Operations, 1 P.M.

ST. BARTHOLOMEW'S HOSPITAL.—Operations, 1½ P.M., and on Saturday at the same hour.—Ophthalmic Operations on Tuesdays and Thursdays, at 1.30 P.M.

ST. MARY'S HOSPITAL.—Operations, 1½ P.M.—Skin Department: 9.30 A.M., on Tuesdays and Fridays.

ST. THOMAS'S HOSPITAL.—Operations, 1½ P.M., and on Saturday at the same hour.

LONDON HOSPITAL.—Operations, 2 P.M., and on Thursday and Saturday at the same hour.

GREAT NORTHERN HOSPITAL.—Operations, 2 P.M.

SAMARITAN FREE HOSPITAL FOR WOMEN AND CHILDREN.—Operations, 2½ P.M.

UNIVERSITY COLLEGE HOSPITAL.—Operations, 2 P.M., and on Saturday at the same hour.—Skin Department: 1.45 P.M., and on Saturday at 9.15 A.M.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—4 P.M. Professor Flower, "On the Principal Types of the Human Species."

OBSTETRICAL SOCIETY OF LONDON.—8 P.M. Specimens will be shown by Dr. Horrocks and others.—Dr. John Williams, "On the Corroding Ulcer of the Os Uteri."—Mr. Alban Doran, "On the Relation of Prolapse of the Vagina to Hernia, illustrated by two Pedigrees."

Thursday, March 6.

ST. GEORGE'S HOSPITAL.—Operations, 1 P.M.

ST. BARTHOLOMEW'S HOSPITAL.—1½ P.M. Surgical Consultations.

CHARING-CROSS HOSPITAL.—Operations, 2 P.M.

CENTRAL LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M., and on Friday at the same hour.

NORTH-WEST LONDON HOSPITAL.—Operations, 2½ P.M.

ROYAL INSTITUTION.—3 P.M. Professor Tyndall, "On the Older Electricity."

HARVEIAN SOCIETY.—8.30 P.M. Mr. Lawson Tait, "On some Recent Advances in Pelvic Surgery."

Friday, March 7.

ST. GEORGE'S HOSPITAL.—Ophthalmic Operations, 1½ P.M.

ST. THOMAS'S HOSPITAL.—Ophthalmic Operations, 2 P.M.

ROYAL SOUTH LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M.

KING'S COLLEGE HOSPITAL.—Operations, 2 P.M.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—4 P.M. Professor Flower, "On the Principal Types of the Human Species."

ROYAL COLLEGE OF PHYSICIANS OF LONDON.—5 P.M. Gulstonian Lecture Dr. Clifford Allbutt, "Chapters on Visceral Neuroses."

ROYAL INSTITUTION.—8 P.M. Mr. C. V. Boys, "On Bicycles and Tricycles."

Saturday, March 8.

KING'S COLLEGE HOSPITAL.—Operations, 1 P.M.

ROYAL FREE HOSPITAL.—Operations, 2 P.M.

ROYAL INSTITUTION.—3 P.M. Captain Abney, "On Photographic Action."

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET OFFICE, Feb. 28th, 1884.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Dry Bulb.	Wet Bulb.	Solar Radia in Vacuo.	Max. Temp. Shade.	Min. Temp	Rain fall.	Remarks at 8.30 A.M.
Feb. 22	29·69	S.W.	47	45	..	53	44	·07	Cloudy
,, 23	29·59	W.	43	41	..	51	40	·13	Cloudy
,, 24	29·49	W.	44	48	..	51	40	·05	Cloudy
,, 25	29·90	W.	39	41	..	50	36	..	Hazy
,, 26	29·95	W.	40	42	..	47	38	..	Foggy
,, 27	30·02	S.E.	36	37	..	46	34	..	Foggy
,, 28	29·98	S.E.	39	35	..	45	35	..	Cloudy

Notes, Short Comments, and Answers to Correspondents.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

All communications relating to the editorial business of the journal must be addressed "To the Editor."

Lectures, original articles, and reports should be written on one side only of the paper.

We cannot prescribe, or recommend practitioners.

Local papers containing reports or news-paragraphs should be marked.

Letters relating to the publication, sale, and advertising departments of THE LANCET *to be addressed "To the Publisher."*

CYCLING FOR MEDICAL MEN.

MR. F. W. CORY, writing to us on this subject, says that there can be no two opinions but that this particular form of exercise, if indulged in with moderation and judgment, is beneficial. He alludes to an article by Dr. Richardson, which appeared in the October number of *Longman's Magazine*, and states that he can, from personal experience, and after observation of its remedial action on patients to whom he has prescribed it, fully endorse the statements therein. The actual cost of repairs, &c., per year Mr. Cory fixes at £3 or £9, a sum which most cyclists will regard as rather over the mark, but which nevertheless contrasts favourably with the expenses attendant on keeping a horse, and he looks with confidence to the time when among medical men the use of bicycles and tricycles will be the rule and not the exception.

E. B.—Theoretically our correspondent may be entitled to the full fee, but law is very uncertain, and we should not, under the circumstances, advise a recourse to it. If he has suffered much inconvenience from the "engagement," he should apply for a larger instalment of the fee, but it does not strike us as a case for litigation. It is often wiser to bear with an injury than to seek the legal redress of it.

A General Practitioner.—The action of Dr. A——, as described by our correspondent, is decidedly unusual, and contrary to the spirit of the bye-laws of the College of Physicians.

Mr. J. W. Miller (Ashton).—The suggestion has many times been made.

M.D. (Clapham).—We regret we cannot assist our correspondent.

"LIMED COAL AS A GAS PURIFIER."

To the Editor of THE LANCET.

SIR,—I read with much interest the annotation which appeared in THE LANCET of February 2nd. Your remarks on the danger to public health, arising from sulphurous acid in gas, are most opportune. In last November a meeting was held in Manchester for the purpose of bringing to the notice of the authorities the evils arising from impure gas. It was stated at that meeting that the Manchester gas contained from thirty-one to forty-five grains of sulphuret of carbon per 100 cubic feet, and, according to the report in the Manchester paper, the engineer of the gas works there stated that these sulphur compounds were beneficial rather than injurious to the health of the inhabitants. This notion I believe prevails also among gas engineers in London, and it is high time such an erroneous impression should be removed.

I have noticed that metal work in London houses is attacked by the poisonous acid resulting from the combustion of London gas, which also affects the tissue of the lungs, causing great irritation, with cough, especially in foggy weather. It seems to me that the remedy suggested by you should be enforced by the gas referees, and that gas companies should be compelled to study the public health to this extent, especially as the proposed remedy can be applied without increasing the cost of manufacture.

I am, Sir, yours, &c.,

London, Feb. 26th, 1884. SANITAS.

MEDICAL PUFFING FROM THE PULPIT.

IT appears that at Frome there is a provident dispensary with one medical man at a stated salary, and that on a recent occasion both the dispensary and this "one man" were held up to admiration by the vicar. There are obvious objections to such personal notices, which we are sure the vicar, on reflection, will perceive.

Dr. Maurice G. Evans.—As our correspondent knows, hops are recognised in the British Pharmacopœia, and may be used in "six" or twelve of the London hospitals. But for the rest of the column of statements we can no more vouch than for a similar column on the miracles wrought by Holloway's ointment.

NOTIFICATION OF DISEASE AT CROYDON.

To the Editor of THE LANCET.

SIR,—Without any opportunity being given to the medical practitioners of this borough of expressing their opinion, the Corporation of Croydon seek to introduce a Bill providing for the compulsory notification of infectious disease to their medical officer of health, for which a fee of 2*s.* 6*d.* will be paid; and in the case of omission to notify, a fine of a sum not exceeding £5, or forty times the amount of the fee, will be exacted.

A meeting of the medical men of Croydon was called recently for the purpose of discussing this proposition. Though probably all present were in favour of the notification of disease, yet, as is usual with the profession, there was no unanimity, save in this one point, that disease should be notified. In Croydon we have a medical officer of health who is also a general practitioner; and I would submit that wherever this is the case compulsory notification to him as the sanitary authority is unadvisable, to say the least.

However much the medical officer of health may seek to do his duty, the fact remains that when compulsory notification is made to him he will become in the eyes of the public a sort of local ruler of the profession. (1) He, a competing practitioner, will become aware of the names, addresses, and social class of his rivals' patients. (2) In the case of petty tradesmen, such steps as the placing a policeman at the door of an infected house to warn off customers, &c., may be resorted to (as stated by Dr. Carter in THE LANCET of July 7th last), and the odium of such proceedings will fall on the declaring medical man, and not on the medical officer of health. (3) It is probable, as in the case given in THE LANCET of Jan. 12th, 1884, page 98, that difference of opinion as to a case may arise between the attendant and the medical officer of health, and in these cases the door is open for frivolous actions for malpraxis by designing persons. (4) The attendant, in his desire to promptly notify, may, by a precipitate and consequently incorrect diagnosis, render himself liable to an action. (5) The fine sought to be levied on the householder ends with the fine; but the mere attempt to recover a fine in a doubtful case by a medical officer of health from a sense of duty may cause most unpleasant scandals. (6) Great hardships would be caused to shopkeepers and others, who under proper advice had taken fitting means to disinfect their premises and isolate their patients, by a visit from the medical officer of health in his official capacity.

There remain these points in favour of the plan:—1. The regular notification of infectious disease. 2. The distribution among the profession of a certain number of half-crowns.

In conclusion, I would submit that where the medical officer of health is a general practitioner compulsory notification by medical men is inadmissible, and that there is an efficient alternative. The householder, when solely responsible for notification, would, it will be objected, in order to escape a fine, naturally seek to deny that he had been informed of the nature of the disorder by the medical attendant. To avoid this a printed intimation in duplicate might be furnished to medical men, half to be signed by the medical man and handed to the householder or person in charge of the patient, and half to be signed by the householder and to be retained by the medical man, as proof that he has performed his duty of notification to the householder. There the medical man's duties should end.

I would expressly state that my remarks in no way refer personally to the present medical officer of health at Croydon, but, unfortunately, changes may take place; and with a practising and pertinaciously inquisitive medical officer of health where should we be?

I am, Sir, yours obediently,

ONE WHO DESIRES THE NOTIFICATION OF DISEASE

Croydon, Feb. 1884. BY THE HOUSEHOLDER.

J. B. W.—See THE LANCET, July 14th and December 22nd, 1883.

H. D. W.—We do not prescribe.

"FOOTBALL ACCIDENTS."

To the Editor of THE LANCET.

SIR,—As the report appearing under the above heading in your issue of Feb. 16th seems to have caused a misunderstanding with many of our policyholders in the medical profession, I beg to point out that our chairman stated at the annual meeting that we had been compelled to decline renewing all *special policies* covering football and bicycling accidents *only*, as our experience went to show that these risks as a special class were most unprofitable. All our general accident policies cover these risks without extra premium.

I am, Sir, your obedient servant,

A. WILLIAMSON, London Manager.

The Northern Accident Insurance Co. (Limited),
Queen Victoria-street, London, E.C.,
Feb. 21st, 1884.

OUT-DOOR ASSISTANCY.

THE questions are strictly legal ones, not medical, and should all have been definitely settled in a contract before A and B began co-operation. Questions which excite no feeling when settled beforehand are delicate when raised afterwards. We can only give general answers to the questions put to us:—1. A was not acting unfairly in asking B to sign an agreement after B's arrival, though it would have been better done before.—2. B should remonstrate with A on his inconsistency in agreeing to B's terms not to practise within seven miles, and then not taking steps to complete the contract, but, after four months' friendly co-operation, giving B a month's notice.—3. We have sufficiently answered this question by implication in the previous answers. It seems to us that either B's expenses of removal should be paid by A, or A should give a longer notice—always, of course, supposing that the statement sent us, which is a moderate one, is also correct.

Mr. D. Hartley (East London, S. Africa) and *Mr. Griffiths* (Manchester). We cannot extend our exchange list at present.

"FACIAL NEURALGIA."

To the Editor of THE LANCET.

SIR,—In reply to "A Constant Reader's" query in the last issue of THE LANCET, believing that he has adopted the best tonic and palliative means within our reach without the desired effect, and seeing that there is no digestive, uterine, oral, or external lesion, or brain cause, and that the disease has existed about five months with but slight intermissions, I conclude that there may be some pathological change in the foramen, through which the nerve passes. I think the patient's history supports this conclusion. The treatment I would suggest is: iodide of potassium in full doses, cod-liver oil, a continuation of the ferruginous tonics, and change to a warm seaside residence.—I am, Sir, yours truly,

Lindley, Huddersfield, Feb. 26th, 1884. J. MAC CORMAC.

To the Editor of THE LANCET.

SIR,—In your issue of to-day I notice a letter signed "A Constant Reader," in reference to an obstinate case of facial neuralgia. May I suggest the following treatment:—Ten or twelve drops of chloroform on some warm cotton-wool applied quickly to the seat of pain, and retained *in situ*, the chloroform being renewed from time to time if necessary. Internally, full doses of the syrup of phosphate of iron three times a day after food. I venture to think your correspondent will find the above remedy a reliable one.

I am, Sir, yours faithfully,

C. J. HARDY SMITH, M.B. Lond.

Durham-terrace, Bayswater, Feb. 23rd, 1884.

To the Editor of THE LANCET.

SIR,—In reply to "A Constant Reader," may I suggest the following prescription, which very rarely fails to relieve "spasmodic" neuralgia:—℞ Chlor. hydrat., 3iss.; tr. ferri mur., 3iss.; quiniæ disulph., gr. xii.; mag. sulph., 3vi.; æth. chlor., 3iss.; aq. ad 3vi. M. ft. mist. Cap. 3j. si dolor est; or may be taken twice or thrice daily to prevent the pain. Also the following liniment, to be well rubbed in the side of the face: Linimentum potassii iodidi cum sapone ("Squire's Companion," p. 243). I am, Sir, yours sincerely,

Sheerness-on-Sea, Feb. 23rd, 1884. O'HARA SMITH.

Lieut.-Col. James.—It would be contrary to our custom to accede to the request.

Mr. Nelson Hardy.—The subject shall be taken up next week.

FEVER HOSPITALS.

To the Editor of THE LANCET.

SIR,—I am urging on the guardians of a union, which has lately had some sharp experience of scarlatina, the necessity of the erection of a fever hospital, but the project is not supported by the medical men of the district. I venture, therefore, to appeal to you on the point whether in a country union comprising many parishes, in a not very thickly inhabited district, the advantages to be looked for from a fever hospital are such as to warrant perseverance on my part in face of something like hostility from the local medical authorities? I am told that if a fever hospital were established no medical man would visit it, for if he did he would lose all his other patients. It is said again that, though such a hospital might be a very good thing if it were erected, yet in practice it would be of little use, as so many cases would escape. Country doctors do not hear of the cases early enough to allow them to order the removal of the patients whilst it is safe to move them. Everyone knows that the law does not compel notification of the existence of infectious diseases. Can no member be found to urge this in Parliament? The chief sanitary officer for the county is satisfied to go on as heretofore if he can secure trained nurses and an empty cottage whenever the fever breaks out: a very big *if* by the way, for cottages are not to be had for love or money, and trained nurses are hardly to be procured for villagers, quite apart from the expense, which, however, can generally be met in one way or another. In addressing you I do not attempt to offer any answer to these objections, though were I writing to our own local paper I should have much to say. I have stated all the case, so far as I have heard it, against me. You are of course perfectly well aware of what there is to be said on the other side.—I am, Sir, yours faithfully,

Feb. 1884. A. B. C.

QUESTION OF TITLES.

Doubtful.—A gentleman "holding the qualification of L.R.C.P. Lond. and the L.S.A. *only*" has a distinct right to describe himself on his plate and to the public as "Surgeon." The assumption that he uses a false title is unfounded, because the licence of the Royal College of Physicians of London is a double qualification, both medical and surgical, and is so recognised by the Local Government Board.

C. de B.—1. We do not see the "legal" difficulty, though there are obvious objections to such an appointment.—2. The use of the title is very questionable, but it is not clear that it could be legally punished. It carries on the face of it its foreign origin. A qualified medical man who puts an assistant's title of M.D. U.S.A. (there is no such title) is certainly acting very wrongly. His conduct ought to be brought under the notice of the Medical Council.

"TREATMENT OF ERYSIPELAS BY WHITE LEAD."

To the Editor of THE LANCET.

SIR,—I am glad to give "Expectans" my experience of the treatment of erysipelas with white-lead paint. I was fortunate enough to have a patient under my care with erysipelas of the head and face on the Saturday that Mr. Barwell's cases appeared in THE LANCET. I had been treating the man, in the ordinary way, with flour and cotton-wool with little or no relief. I applied the paint on Saturday evening; it was followed by ease in about half an hour. The case made rapid progress towards recovery, and got well in a few days. Since then I have treated many cases with the paint, with the same result; and at the present time I have a young man, a farm labourer, under my care with erysipelas of the head and face. I commenced the treatment last Saturday, and when I visited him this morning found him up, the swelling having subsided, and all pain and constitutional disturbance gone.

I am, Sir, yours faithfully,

Worksop, Feb. 27th, 1884. E. LLOYD, M.D.

To the Editor of THE LANCET.

SIR,—In reply to "Expectans," in last week's LANCET, asking for information as to the merits of white lead in erysipelas, I have used extensively for several years an albuminous lead liniment, prepared by Messrs. Jacks and Co., of Gower-street, not only in erysipelas, but in all forms of irritable skin affections. I have never found anything to equal it. It is merely painted over and beyond the affected part, and the result is always satisfactory. The preparation is called "Wilson's linimentum plumbi lactatis co."—I am, Sir, yours faithfully,

Southampton, Feb. 24th, 1884. C. J. C.

To the Editor of THE LANCET.

SIR,—I beg to inform "Expectans" that I have employed white lead paint in the treatment of three cases of erysipelas of the face during the last six months, in one of which there was considerable delirium. The recovery in all three cases was very rapid and satisfactory, no symptoms of lead poisoning were present, and the alleviation of pain most marked.

I am, Sir, yours truly,

Willoughby-street, Gainsboro', Feb. 1884. R. H. PATERSON.

Messrs. Christy & Co.—The correspondence forwarded is hardly suitable for our columns, as the question raised therein only indirectly affects the medical profession.

Mr. John Godson's views seem very much behind the age. We cannot find space for his letter.

AN ABNORMAL CASE OF PRESENTATION AND DELIVERY.

To the Editor of THE LANCET.

SIR,—The following case may not be uninstructive nor uninteresting to your readers.

I was called to attend Mrs. C——, aged twenty-five years, and in fairly good health, in her second confinement, at about 11 A.M. on the 16th inst. My services had been engaged only a few days previously, as she did not expect to be confined until the middle of March. I attended at once, and on making a digital examination found the sac of membranes filling up the vagina and reaching down to its external orifice. From this fact alone I felt that all was not right, and so at once ruptured the membranes, when at least three pints of liquor amnii rushed out, saturating everything. When the flow had ceased I again examined, and found the head presenting (high up), with the right hand resting on the right parietal bone, close to the anterior fontanelle. The os uteri was of course fully expanded. Now, in such cases previously I have always turned, and I attempted to do so in this instance, but the patient became so violent, and her mother entreated me so earnestly to desist, that I felt compelled to do so. After waiting a quarter of an hour, strong real labour pains set in, and, notwithstanding the presentation, the woman was delivered in less than an hour after the rupture of the membranes, the hand and head being expelled at the same time and in the same position as I had noticed at the first examination. The child's head was about the average size, but the body and lower extremities were lean and ill-nourished. It was born alive, but survived its birth only some forty minutes.

During an experience of nearly fifteen years of obstetric practice I never saw nor heard of a similar case of delivery. The placenta was removed without any difficulty five minutes after the birth of the child. The mother is doing well. I may add that her first labour, fourteen months previously, was a natural one, and the child is still living and healthy.—I am, Sir, yours, &c.,

Feb. 25th, 1884. D. J. O'KEEFFE, L.R.C.P., L.R.C.S. Ed.

Dr. Brookhouse.—The procedure adopted by the insurance society appears justifiable. The form of questions to be filled up by private friends is different from that to be filled up by the medical examiner, and it is not the fault of the office if, when a proposal is sent in, the name of a medical man is given as a "friend." It frequently happens that a medical man proposing to assure gives the name of another medical man as his medical attendant, and the names of two other medical men as his two friends. If our correspondent's argument were sound, the office would be expected to pay a fee to each of the three, a demand which would be manifestly unjust.

R. A. R. B.—The advice of an ophthalmic surgeon should be sought in the case.

"SNAKE-POISON."

To the Editor of THE LANCET.

SIR,—Referring to that portion of the able articles by Sir J. Fayrer in your columns which deals with the question of an antidote to snake-poisons, it seems to me, as a chemist, that until some further light is thrown upon the chemical composition and properties of the active principle of these poisons, attempts to find an antidote to them physiologically must continually fail, unless the problem be solved by some happy accident. What I mean may be illustrated by the case of oxalic acid. That substance is a well-known active poison, quite apart from its escharotic powers, as shown by the fact that the poisonous property is in no way diminished by merely neutralising the acid with an alkali, for the oxalates of the alkalies are equally poisonous with it. Lime is the antidote, and the key to its action is this, that lime oxalate is completely insoluble in water, nor is it decomposed by the enteric juices, so far as we are aware; hence its antidotal effect is as much physiological as chemical.

In the case of the poison of the cobra this much has been proved by the ingenious experiments of Mr. Wynter Blyth, medical officer of health for Marylebone—viz., that the active principle of the poison is soluble in water, and may be completely separated from the mass of the secretion by dialysis—strong presumptive evidence that it is a crystallisable body, and that it is an acid (which he provisionally termed cobric acid), the quantity of material he obtained being too small for analysis.

Here, then, we may claim that some progress has been made, and that probably the much-desired end may be gained by pursuing the inquiry on the lines he has thus indicated, while certainly any physiological experiments would be greatly facilitated by the employment of the pure principle. I confess my belief, however, that the true antidote or antidotes (for each poison may require a different one) will probably be found in a physiological, and not a mere chemical opposite, as in the remarkable instance of the effects of atropine and physostigmine upon the iris.

I am, Sir, your obedient servant,

CHARLES H. PIESSE,
F. Inst. Chem., Public Analyst, Strand District.

Cassiobury-road, Fulham, S.W., Feb. 25th, 1884.

Messrs. Edwards and Bradley.—"El Anfiteatro Anatomico Espanol," published at Madrid; and "Revista de la Medicina y Cirurgia Pratica," Madrid.

Doubtful.—We shall probably have something to say on the matter next week.

POLLUTION OF WELLS.

To the Editor of THE LANCET.

SIR,—As solicitors for the plaintiff in the action of Ballard *v.* Tomlinson, referred to in your issue of Feb. 23rd, permit us to call your attention to one small particular upon which you have been misinformed. It is with reference to the probability of there being no appeal. On the contrary, we are instructed to take the necessary steps for bringing the matter before the Court of Appeal directly certain necessary legal formalities have been gone through.

We are, Sir, your obedient servants,

Essex-street, Strand, Feb. 25th, 1884. G. H. K. & G. A. FISHER.

COMMUNICATIONS, LETTERS, &c., have been received from—Professor Caulani, Naples; Dr. Herschell, London; Mr. Williamson, London; Dr. Maurice Evans, Cardiff; Mr. F. T. Pearse, Haslemere; Dr. Best, Birmingham; Mr. Clement Lucas, London; Dr. Rogers, London; Mr. Hartley, Cape Colony; Mr. Colcott Fox, London; Dr. F. Page, Newcastle-on-Tyne; Dr. Alder Smith, London; Dr. Ewart, London; Dr. M'Mordie, Belfast; Mr. Paterson, Gainsboro'; Mr. O'H. Smith, Sheerness; Mr. Neilson, Birkenhead; Dr. Laffan, Cashel; Mr. Owen, The Brook; Dr. O'Leary, London; Lieut.-Col. H. James, Algiers; Mr. Mayo Robson, Leeds; Mr. Roberts, Uxbridge; Mr. Cole, Hatton; Dr. A. Lecoq, London; Dr. Whamond, Jarrow; Mr. Slater, London; Dr. Tibbits, Bradford; Mr. Luna, London; Mr. Strong, Sunderland; Mr. Faulkner, London; Mr. Blackwood, Edinburgh; Mr. Reginald Harrison, Liverpool; Mr. Tyrrell, Claremont; Mr. Hadley, London; Mr. T. Holmes, London; Mr. Nockolds, London; Messrs. Christy and Co., London; Mr. Lupton, Stratford-on-Avon; Mr. Nelson Hardy; Mr. Day; Dr. Miliano, New York; Dr. W. H. O. Sankey, Boreattonpark; Mr. Hardy Smith, London; Mr. Ormsby, Edinburgh; Dr. Pavy, London; Dr. Shuttleworth; Dr. Bristowe, London; Mr. J. W. Miller, Ashton; Dr. Gervis, London; Mr. Godson, Birmingham; Dr. Wilson, Cheltenham; Messrs. Evans and Wormull, London; Messrs. Fisher, London; Mr. E. S. Pearse, Brierley-hill; Mr. Ballance, London; Mr. W. H. Denham, Southsea; Mr. O'Keefe, Oldham; Dr. Savage, London; Mr. Duckworth, Accrington; Messrs. Smith and Son, Manchester; Mr. Grenfell, Penzance; Mr. Edwards, Burton-on-Trent; Messrs. Wood and Co., New York; Dr. Althaus, London; Mr. Darke; Dr. Vidal, Hyères; Dr. Lucas, Ahmedabad; Dr. Furnell, Madras; Mr. Heinemann, London; Messrs. Robertson and Scott, Edinburgh; Messrs. Heal and Sons, London; Dr. Johnston, Sheffield; Dr. Spender, Bath; Mr. Mitchell, London; Mr. Townsend, Exeter; Mr. Chichley, Liverpool; Mr. Armstrong, Manchester; Mr. Armstrong, Newcastle-on-Tyne; Messrs. Reynolds and Branson, Leeds; Messrs. Loofiund and Co., London; Mr. Larmuth, Southwark; Dr. Law, St. Leonards; Mr. Macnamara; Mr. Radley; Dr. Steele, Ealing; Mr. Berkeley Hill, London; Dr. Lediard, Carlisle; Dr. Mahomed, London; Mr. Startin, London; Mr. Lloyd, Worksop; Mr. Hadden, London; Mr. Snell, Edinburgh; Dr. W. G. Balfour, Bombay; Mr. Moore, Blackheath; Dr. Hobbs, London; J. Mac Cormac; Assistant; R. A. R. B.; F. P.; Doubtful; M.R.C.S.; C. J. C.; Churchman; E. C., Whitstable; F.; Forceps; &c. &c.

LETTERS, *each with enclosure*, are also acknowledged from—Mr. Davies, Bath; Mr. Bagshaw, Salford; Mr. Fielder, Chichester; Dr. Fraser, Vernon; Dr. Anderson, Leipzig; Dr. Kingston, Yeovil; Mr. Walker, Kilburn; Mr. Martindale, London; Mr. Cole, London; Mr. Twyford, Hanley; Mr. W. Adams, London; Dr. Macnaughton Jones, London; Dr. Norton, Bournemouth; Dr. Woakes, London; Mr. Strickland, South Kensington; Mr. Gill; Dr. Tate, Nottingham; Mr. Devonport, London; Mr. Kolkman, Leicester; Messrs. Baines and Sons, Leeds; Mr. Hamilton, Burton-on-Trent; Mr. Hardwick, Ventnor; Mr. Kerr, Glasgow; Messrs. Oliver and Boyd, Edinburgh; Captain Hardy, London; Mr. J. Cormac, Darlington; Messrs. W. and A. Johnston, Edinburgh; Mr. Smith, Southampton; Mr. Cornish, Manchester; Mr. Marsh, Hindley; Mr. Peare, Sheffield; Mr. R. Mitchell, London; Mr. Davies, Penycraig; Mr. Baker, Clapham; Dr. Bower, Bedford; Mr. Whitehead, Nottingham; Appointment; Alpha, Woolwich; F. G.; F. E., Southampton; Medicus, Cardiff; O. M., Cirencester; Doctor, St. John's-wood; O.; Delta, London; M. D. M. C., Killilaigh; Medicus, Forest-hill; E. W.; L. B. B., Commercial-road; Egypt; A. D., Leighton Buzzard; Alpha, Llanwrst; Speranza; Mental; &c. &c.

Galloway Gazette, Chester Chronicle, Weston Mercury, Tit Bits, Denbigh Free Press, Warehousemen and Drapers' Trade Journal, Sunderland Herald, Melbourne Argus, Cape Times, Indian Statesman, Kentish Gazette, South African Medical Journal, Blackwood's Magazine, &c., have been received.

SUBSCRIPTION.

POST FREE TO ANY PART OF THE UNITED KINGDOM.

One Year.....	£1 12 6	Six Months.....	£0 16 3
To CHINA AND INDIA.....		One Year	1 16 10
To THE COLONIES AND UNITED STATES ..		Ditto	1 14 8

Post Office Orders should be addressed to JOHN CROFT, THE LANCET Office, 423, Strand, London, and made payable at the Post Office, Charing-cross.

Notices of Births, Marriages, and Deaths are charged five shillings.

Cheques to be crossed "London and Westminster Bank."

ADVERTISING.

Books and Publications	£0	5	8
Official and General Announcements	0	5	0
Trade and Miscellaneous Advertisements	0	4	6
Seven lines and under (each averaging ten words).			
Every additional Line	0	0	6
Front Page .. .. per Line	0	1	0
Quarter Page	1	10	0
Half a Page	2	15	0
An entire Page	5	5	0

The Publisher cannot hold himself responsible for the return of testimonials, &c., sent to the office in reply to advertisements; copies only should be forwarded.

NOTICE.—Advertisers are requested to observe that it is contrary to the Postal Regulations to receive at Post-offices letters addressed to initials only.

An original and novel feature of "THE LANCET General Advertiser" is a special Index to Advertisements on page 2, which not only affords a ready means of finding any notice, but is in itself an *additional* advertisement.

Advertisements (to ensure insertion the same week) should be delivered at the Office not later than Wednesday, accompanied by a remittance.

Answers are now received at this Office, by special arrangement, to Advertisements appearing in THE LANCET.

Terms for Serial Insertions may be obtained of the Publisher, to whom all letters relating to Advertisements or Subscriptions should be addressed.

Advertisements are now received at all Messrs. W. H. Smith and Sons' Railway Bookstalls throughout the United Kingdom, and all other Advertising Agents.

Tables of Contents, with the Index of Advertisements, for each Number can be had on application to the Publisher.

Agent for the Advertising Department in France—J. ASTIER, 68, Rue Caumartin, Paris.

BEST COPY AVAILABLE